

Dental Assisting Expanded Functions Curriculum 2013

Adapted and revised to meet the requirements for expanded function dental assistants preparing for employment in dental healthcare settings postsecondary educational and training programs.

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SECTION 1.0 Administration of Nitrous Oxide/Oxygen Analgesia

Didactic Education

Intended Outcome

Given information about the properties, effects and uses of nitrous oxide, analgesia versus anesthesia, equipment used in administration of nitrous oxide, administration, legal chart entries and terms related to breathing and respiration, overall the student must demonstrate at least 85% accuracy on the didactic examination.

Tasks

Number of tasks to master = 116

1.01 Properties of Nitrous Oxide

- A. List the five properties of nitrous oxide.
 - 1. True anesthetic
 - 2. Least potent of all anesthetic gases
 - 3. Nonirritating, colorless gas with a sweet taste and odor
 - 4. Travels through the bloodstream in a free gas state
 - 5. Total saturation in the blood occurs within 3 to 5 minutes

1.02 Effects of Nitrous Oxide

- A. List four pharmacological effects of nitrous oxide.
 - 1. Total circulation time for one breath of nitrous oxide/oxygen is 3 to 5 minutes
 - 2. No changes in the heart rate (pulse) or blood pressure
 - 3. Nonirritating to the lungs
 - 4. Changes in the respiratory rate are related more to the relaxation of the patient than to the nitrous oxide itself
- B. Give the definition of each of the seven terms that relate to breathing or respirations.
 - 1. Eupnea: Normal breathing
 - 2. Tachypnea: Rapid breathing
 - 3. Bradypnea: Slow breathing
 - 4. Hyperpnea: Over respirations
 - 5. Hypopnea: Under respiration
 - 6. Anoxia: Total lack of oxygen

7. Hypoxia: Decreased oxygen in the tissue
- C. Identify the most common side effect of nitrous oxide.
 1. Nausea
- D. List five reasons that increase the incidence of nausea.
 1. Prolonged administration or rapid induction
 2. Higher concentrations
 3. Following a heavy meal
 4. Following fasting
 5. Patients with a history of vomiting or motion sickness
- E. List six adverse reactions of nitrous oxide.
 1. Hypoxia
 2. Bone marrow depression
 3. Pressure/volume effect
 4. Psychological reactions
 5. Fire
 6. Protective reflexes

1.03 Analgesia versus Anesthesia

- A. Describe the three types of pain control.
 1. Sedation: The calming of a nervous apprehensive patient without loss of consciousness.
 2. Analgesia: Creates a decreased ability (relative anesthesia) or inability to perceive pain.
 3. Anesthesia: Produces a lack of all sensation.
- B. Identify the four stages of anesthesia.
 1. Analgesia: The patient is conscious, cooperative, and pain reaction is decreased.
 2. Delirium: The excitement stage. The patient becomes extremely stimulated, raged, and possibly angry.
 3. Surgical: The patient is unconscious and life support is required. Total lack of sensation.
 4. Respiratory paralysis: Death occurs in this stage.
- C. Identify the five clinical effects of plane 1 analgesia.
 1. Patient appears normal, relaxed, and awake

2. Slight tingling in the toes, fingers, tongue, or lips
3. Patient may giggle
4. Vital signs remain normal
5. No definite clinical manifestations

D. Identify the ten clinical effects of plane 2 analgesia.

1. Patient may have a dreamy look
2. Reactions of the patient are slowed
3. Partial amnesia may occur
4. Voice will sound “throaty”
5. Patient will feel warm and drowsy
6. Patient may drift in and out of the environment
7. Patient may hear pleasant ringing in ears
8. Vital signs remain normal
9. Pain is reduced or eliminated, but touch and pressure are still perceived
10. Patient is less aware of surroundings and sounds and smells are dulled

E. Identify the eight clinical effects of plane 3 analgesia.

1. Patient becomes angry with a hard stare
2. Patient’s mouth tends to close frequently
3. Patient no longer cooperates
4. Patient is totally unaware of surroundings
5. Patient may hallucinate
6. Patient’s chest may feel heavy
7. Sensation of flying or falling uncontrolled spinning
8. Pupils may dilate

1.04 Uses of Nitrous Oxide/Oxygen

A. List four primary indications for use of nitrous oxide/oxygen.

1. Patients with fear and anxiety
2. Patients who are allergic to or refuse local anesthesia
3. Patients with a prominent gag reflex
4. Impatient patients

B. List six indications for use of nitrous oxide/oxygen with special considerations.

1. Patients with cardiovascular disease

2. Patients with cerebrovascular disease
3. Patients with respiratory disease such as asthma
4. Patients with hepatic (liver) disease
5. Patients with seizure disorders
6. Patients taking tranquilizers, analgesics, antidepressants, or hypnotics

1.05 Equipment Used in the Administration of Nitrous Oxide/Oxygen

A. List four pieces of equipment necessary in the use of nitrous oxide/oxygen.

1. Nitrous oxide tank (always blue)
2. Oxygen tank (always green)
3. Nitrous oxide/oxygen machine
4. Breathing apparatus

B. Identify three types of breathing apparatus.

1. Full face mask
2. Nasal hood/with scavenger (recommended)
3. Nasal cannula

C. List the eight safety features used on nitrous oxide equipment.

1. Pin index and diameter index safety system
2. Minimum oxygen liter flow
3. Oxygen fail-safe system
4. Emergency air inlet
5. Fail-safe alarm
6. Oxygen flush button
7. Color coding
8. Textured knobs

1.06 Administering Nitrous Oxide/Oxygen

A. List the four steps to prepare the patient.

1. Complete and review medical history
2. Obtain vital signs
3. Discuss procedure with patient
 - i. Sensations expected
 - ii. Breathe through nose

- iii. Obtain consent
- 4. Select nosepiece
- B. List the nine steps that should be followed when administering nitrous oxide.
 - 1. Begin the flow of oxygen at 8 liters.
 - 2. Place the nasal hood over the patient's nose.
 - 3. Begin the nitrous oxide at 20% and the oxygen at 85%.
 - 4. Observe the patient for 1 minute prior to changing dosages.
 - 5. Increase the nitrous oxide by ½ liter and decrease the oxygen by ½ liter until desired effect is obtained, never more than 50% N₂O. Maintain 8 liters of gases.
 - 6. Monitor clinical manifestations closely.
 - 7. Adjust oxygen levels as needed to maintain desired effect.
 - 8. Never leave the patient unattended.
 - 9. Oxygenate the patient 3 to 5 minutes until normalcy is regained.

1.07 Legal Chart Entries

- A. List the eight items that should be included in the patients chart entry.
 - 1. Patient's vital signs, both pre- and post-operative.
 - 2. Consent of patient was granted.
 - 3. Routine information including the date, procedure performed, and post-operative information given.
 - 4. Maximum levels of nitrous oxide used, stated in terms of percentages.
 - 5. Length of administration.
 - 6. Any other anesthetics or medications given.
 - 7. Length of oxygenation.
 - 8. Any side effects or complications incurred.

1.08 Minimizing Occupational Exposure

- A. List four primary preventive measures to reduce occupational exposure of N₂O in the dental office.
 - 1. Test and maintenance of equipment four times per year
 - 2. Use low leakage techniques
 - 3. Use devices for collection and disposal of gases
 - 4. Use an air monitoring system

Clinical Education

Intended Outcome

Given information about the properties, effects and uses of nitrous oxide, analgesia versus anesthesia, equipment used in administration of nitrous oxide, administration, legal chart entries and terms related to breathing and respiration, overall the student must demonstrate at least an 85% accuracy on the didactic examination.

Tasks

Number of tasks to master = 116

1.01 Administration of Nitrous Oxide/Oxygen Sedation

1. Inspect the nitrous oxide/oxygen equipment for proper setup.
2. Select the proper nasal hood for the patient and attach to the hoses.
3. Update the patient's health history.
4. Take and record the patient's vital signs.
5. Explain the nitrous oxide/oxygen procedure to the patient.
6. Obtain written consent from the patient.
7. Place the patient in the supine position.
8. Initiate the flow of oxygen.
9. Place and adjust the nosepiece on the patient.
10. Establish the appropriate tidal volume.
11. Have the dentist initiate the flow of nitrous oxide.
12. Monitor and record the patient's reaction to the nitrous oxide/oxygen throughout the procedure.
13. At the direction of the dentist turn off the flow of the nitrous oxide and increase the flow of oxygen.
14. Oxygenate the patient for at least 5 minutes and record the patient's response.
15. Remove the nosepiece and position the patient in the upright position.
16. Take and record the patient's vital signs.
17. Complete the patient's sedation record.
18. Release the patient.
19. Properly disassemble and disinfect the equipment

1.02 Monitoring the Administration of Nitrous Oxide/Oxygen Sedation

1. Inspect the nitrous oxide/oxygen equipment for proper setup.
2. Select the proper nosepiece for the patient and attach to the hoses.
3. Update the patient's health history.
4. Take and record the patient's vital signs.
5. Explain the nitrous oxide/oxygen procedure to the patient.
6. Obtain written consent from the patient.
7. Place the patient in the supine position.
8. Initiate the flow of oxygen and fill the reservoir bag two-thirds full.
9. Place and adjust the nosepiece on the patient.
10. Establish the appropriate tidal volume by observing the reservoir bag.
11. Initiate the flow of nitrous oxide to 10%, approximately 1L.
12. Assess the patient for signs and symptoms of appropriate sedation.
13. Increase the flow of nitrous oxide by 5%, approximately .5L, every 1 to 3 minutes until appropriate sedation is reached.
14. Monitor and record patient's reaction to the nitrous oxide/oxygen throughout the procedure.
15. At the completion of the dental treatment turn off the flow of nitrous oxide and increase the flow of oxygen.
16. Oxygenate the patient for at least 5 minutes, recording the patient's response.
17. Remove nosepiece and position the patient in the upright position.
18. Take and record patient's vital signs.
19. Complete the patient's sedation record.
20. Ensure recovery and dismiss the patient.
21. Properly disassemble and disinfect the equipment.

Competency-Based Practice Evaluation

Monitoring the Administration of Nitrous Oxide/Oxygen Sedation

Student Name: _____

Supervising Dentist: _____ Date: _____ Grade: ☐ Pass ☐ Fail

Dentist Signature: _____

Intended Outcome

Given the necessary personnel, supplies and equipment, the student will assist with the administration of nitrous oxide analgesia by monitoring the patient's reactions and recording appropriate information in the patient's record. Please explain any not applicable (NA) in the comments area. The student will perform the task with 100% accuracy.

	Tasks	Pass	Fail
1	Inspect the nitrous oxide/oxygen equipment for proper setup.		
2	Select proper nosepiece for patient and attach to the hoses.		
3	Update the patient's health history.		
4	Take and record patient's vital signs.		
5	Explain the nitrous oxide/oxygen procedure to the patient.		
6	Obtain written consent from the patient.		
7	Place patient in supine position.		
8	Initiate the flow of oxygen.		
9	Place and adjust the nosepiece on the patient.		
10	Establish appropriate tidal volume.		
11	At this time the dentist should initiate the flow of N ₂ O.		
12	Monitor and record patient's reaction to the nitrous oxide/oxygen throughout the procedure.		
13	At the direction of the dentist turn off the flow of the N ₂ O and increase the flow of O ₂ .		
14	Oxygenate the patient for at least 5 minutes, recording the patient's response.		
15	Remove nosepiece and position the patient in the upright position.		
16	Take and record patient's vital signs.		
17	Complete the patient's sedation record.		
18	Release the patient.		
19	Properly disassemble and disinfect the equipment.		
Comments:			

CLINICAL REQUIREMENT

FORMS TO BE SUBMITTED TO CLINICAL EXAMINER AT FINAL EXAMINATION

Competency-Based Practice Evaluation

Administration of Nitrous Oxide/Oxygen Sedation

Student Name: _____

Supervising Dentist: _____ Date: _____ Grade: ☐ Pass ☐ Fail

Dentist Signature: _____

Intended Outcome

Given the necessary personnel, supplies and equipment, the student will administer nitrous oxide analgesia and record appropriate information in the patient's record. Please explain any not applicable (NA) task in the comments area. The student will perform the task with 100% accuracy.

	Tasks	Pass	Fail
1	Inspect the N ₂ O/O ₂ equipment for proper setup.		
2	Select proper nosepiece for patient and attach to the hoses.		
3	Update the patient's health history.		
4	Take and record patient's vital signs.		
5	Explain the N ₂ O/O ₂ procedure to the patient.		
6	Obtain written consent from the patient.		
7	Place patient in supine position.		
8	Initiate the flow of oxygen and fill reservoir bag 2/3 full.		
9	Place and adjust the nosepiece on the patient.		
10	Establish appropriate tidal volume. Observe the reservoir bag.		
11	Initiate N ₂ O flow starting at 10%, approximately 1L.		
12	Assess patient for sign and symptoms of appropriate sedation.		
13	Increase N ₂ O by 5%, approximately .5L, every 1 to 3 minutes until appropriate sedation is obtained.		
14	Monitor and record patient's reaction to the N ₂ O/O ₂ throughout the procedure.		
15	At the completion of the treatment turn off the flow of the N ₂ O and increase the flow of O ₂ .		
16	Oxygenate the patient for at least 5 minutes, recording the patient's response.		
17	Remove nosepiece and position the patient in the upright position.		
18	Take and record patient's vital signs.		
19	Complete the patient's sedation record.		
20	Ensure recovery and dismiss the patient.		
21	Properly disassemble and disinfect the equipment.		
Comments:			

Clinical Requirements Completed

Nitrous Oxide/Oxygen Analgesia

Each student is required to monitor and administer nitrous oxide/oxygen on a patient. Review of the machine features and safety components must be completed prior to procedure. This is to be supervised by a dentist. Consent/permission slips and sedation record required.

	Dentist Signature	Date
1.		
2.		

CLINICAL REQUIREMENT

FORMS TO BE SUBMITTED TO CLINICAL EXAMINER AT FINAL EXAMINATION

Informed Consent

Use of Nitrous Oxide/ Oxygen Sedation

I understand that my treatment today will include the procedure of N₂O/O₂ administration.

I have been informed of the purpose of the procedure and how it will benefit my treatment. The procedure has been described to me and I understand how it will be accomplished. I understand the procedure should make me feel more relaxed and less anxious.

I understand there are certain risks associated with the administration of N₂O/O₂ and that these risks are minimal. I realize that the doctor must know if I have taken any type of medication or drugs within the past 72 hours because these may cause an adverse reaction with the administration of N₂O/O₂. I verify that I have disclosed this information today.

I have had the opportunity to ask questions and have had all of my concerns addressed concerning this procedure.

I give my informed consent to the administration of N₂O/O₂ sedation and agree to hold harmless, release and indemnify agents, students and employees of the facility listed on the bottom of this page from any and all causes of action, claims, demands or liability that may arise out of such treatment on behalf of myself, my heirs, my executors, administrators or assigns; or on behalf of my minor child (children) or their heirs, executors, administrators or assigns.

Patient Name (Printed): _____

Patient Signature: _____

Date: _____ Time: _____

Dental Facility: _____

Address: _____

Phone: _____

Supervising Dentist (Printed): _____

Supervising Dentist (Signature): _____

CLINICAL REQUIREMENT

FORMS TO BE SUBMITTED TO CLINICAL EXAMINER AT FINAL EXAMINATION

Nitrous Oxide/Oxygen Sedation Record

Name of Dental Facility: _____

Address of Dental Facility: _____

Patient Name: _____ Date: _____ Age: _____

Indications for use: _____

Pre-Operative

Post-Operative

Blood Pressure: _____

Pulse: _____

Respiration: _____

Tidal Volume (L/min): _____ Liters N₂O: _____ Liters O₂: _____

Peak % N₂O Administered: _____

Signs and symptoms experienced by patient: _____

Post-Op 100% Oxygen: _____ Minutes

Patient recovery comments: _____

Adverse reactions or comments: _____

Clinician/Student Signature: _____

Supervising Dentist Signature: _____

CLINICAL REQUIREMENT

FORMS TO BE SUBMITTED TO CLINICAL EXAMINER AT FINAL EXAMINATION

Competency-Based Clinical Final Evaluation

Administering Nitrous Oxide/Oxygen Sedation

Student Name: _____

Evaluator: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary personnel, supplies and equipment to administer nitrous oxide/oxygen sedation, the student will perform the following tasks on a manikin/model with 85% accuracy on the final examination.

Time allotment: 30 minutes

Grading Criteria				
	2 = Acceptable	1 = Improvable	0 = Unacceptable	0-2
1	Check nitrous oxide and oxygen tanks for adequate supply.			
2	Inspected all equipment for proper setup and usage.			
3	Identify all the parts of the nitrous oxide equipment and explain the function of each part.			
4	Select appropriate nosepiece and attach to nitrous machine.			
5	Explain the importance of the health history and why it should be updated.			
6	Demonstrate taking vital signs.			
7	Explain the use of the informed consent form.			
8	Explain the nitrous oxide/oxygen procedure.			
9	Explain how to initiate oxygen flow and what tidal flow volume is.			
10	Demonstrate how to initiate the nitrous oxide and adjust the flow accordingly.			
11	Explain oxygenation, how it is performed and for how long.			
12	Complete a sedation record.			
13	Properly disassemble and disinfect the nitrous oxide equipment			
Total				
Comments:				

CLINICAL REQUIREMENT

FORMS TO BE SUBMITTED TO CLINICAL EXAMINER AT FINAL EXAMINATION

SECTION 2.0 Polishing Restorations

Didactic Education

Part I: Polishing Amalgam Restorations

Intended Outcome

Given information about the principles of amalgam restorations and the amalgam finishing and polishing armentarium, overall the student must demonstrate at least 80% accuracy on the didactic examination.

Tasks

Number of tasks to master = 88

2.01 Principles of Amalgam Restorations

- A. List the four major reasons for polishing amalgam restorations.
 - 1. Prevention of recurrent decay
 - 2. Prevention of amalgam deterioration
 - 3. Maintenance of periodontal health
 - 4. Prevention of occlusal problems
- B. Explain two reasons why finishing and polishing of amalgam restorations prevents recurrent decay.
 - 1. By eliminating surface roughness, plaque has less surface area to colonize.
 - 2. The smooth, lustrous finish is easier to clean than an unpolished surface.
- C. List two forms of amalgam deterioration that finishing and polishing can prevent or delay.
 - 1. Tarnish
 - 2. Corrosion
- D. Explain the difference between corrosion and tarnish.
 - 1. Tarnish is a surface discoloration resulting from the interaction of the metal, oxygen, and sulfides from foods, etc.
 - 2. Corrosion is a surface, as well as a subsurface, chemical reaction that results in the structural breakdown of the amalgam causing pitting and fracture of the restoration's margins.
- E. List the four embrasures found between teeth.

1. Occlusal embrasure
 2. Gingival embrasure
 3. Buccal/facial embrasures
 4. Lingual/palatal embrasures
- F. List six improper contours that can be found on amalgam restorations.
1. Over contoured
 2. Under contoured
 3. Tight contact
 4. Overhanging margin
 5. High occlusion
 6. Rough
- G. List seven problems associated with improper contours.
1. Makes area difficult to clean
 2. Traps plaque
 3. Gingival trauma under function
 4. Gingival inflammation with periodontal pocketing
 5. Pain and sensitivity of teeth
 6. Fracture of tooth or restoration
 7. Misalignment of teeth
- H. Explain the difference between flashing and ditching.
1. Flashing: Excess amalgam at the cavosurface margin resulting in the restoration margin being above the cavosurface of the enamel.
 2. Ditching: Insufficient amalgam at the cavosurface margin resulting in the restoration margin being below the cavosurface of the enamel.
- I. List five criteria for serviceable amalgams that indicate polishing.
1. No fracturing of the restoration or tooth structure.
 2. Adequate interproximal tooth contact (Class II restorations).
 3. Adequate tooth anatomy can be maintained.
 4. Margins are flush with cavosurface margin of prep (no ditching, flashing or open margins).
 5. Occlusion can be maintained.
- J. Explain the difference between finishing and polishing.

1. Finishing: The removal of gross surface irregularities by contouring, removing surface discrepancies, defining the anatomy, and smoothing the amalgam surface. This will result in an optimal overall contour, an undetectable transition at the cavosurface margin, and a uniform surface smoothness.
2. Polishing: The consecutive use of abrasive agents that progress from coarse texture to very fine in order to produce the smoothest and shiniest surface possible.

2.02 Principles and Precautions of Polishing

A. List four principles of polishing.

1. Abrasive agents are used from most coarse to most fine.
2. Particle hardness, size, and shape will determine abrasiveness.
3. The pressure and speed used affect abrasiveness and heat production.
4. Heat production is potentially dangerous to the tooth.

B. List and explain five precautions that must be taken during the polishing procedure.

1. Maintain functional anatomy by using the instruments in the correct manner.
 - i. Start all rotary instruments prior to touching the restoration.
 - ii. Keep instruments moving over the surface.
 - iii. Use short overlapping strokes to minimize friction.
 - iv. Use each instrument only on the surfaces for which it was designed.
 - v. Be aware of the four surface changes that can be inflicted upon a restoration while finishing and polishing that will destroy it.
 - a. Flattening cusps excessively
 - b. Reducing marginal ridges below the plane of occlusion
 - c. Removing the contact
 - d. Deeply ditching or grooving the restoration
2. Avoid improper contouring by understanding the proper tooth anatomy that must be achieved.
3. Prevent damage to the patient's soft tissue.
 - i. Retract the tongue, cheeks, and lips during the procedure.
 - ii. Position instruments correctly so they will not abrade the soft tissue.
 - iii. Use a secure grasp and stable fulcrum with each instrument.
 - iv. Rinse all abrasive materials from the mouth after polishing.

4. Protect the patient from polishing debris.
 - i. Remove excess abrasive material from the mouth as quickly as possible.
 - ii. Provide eye protection for the patient.
 - iii. Do not carry instruments or abrasive materials over the patient's face.
5. Protect the pulp of the tooth from excess heat.
 - i. Use air or water cooling streams whenever possible.
 - ii. Run rotary instruments at the minimum speed that will still be effective.
 - iii. Use intermittent contact of the rotary instruments to the tooth surface.

2.03 The Amalgam Polishing Armamentarium

There is much duplication in the instruments and materials available for finishing and polishing. The operator should strive to select a minimum number that will do the job well, but that will keep the procedure simple and minimize the amount of time necessary to accomplish the procedure.

The Idaho State Board of Dentistry has stated that a dental assistant should not operate a high speed handpiece in any capacity. When using any of the following rotary instruments, it is intended that they be used in a slow speed handpiece.

- A. Explain the use for two major types of finishing agents available for amalgam restorations.
 1. Finishing Burs: These burs have 12 or 32 blades. These burs should always be run in reverse to avoid cutting tooth structure. Idaho State law prohibits the removal of tooth structure by a dental assistant. They can be used to define and smooth grooves and fossae, smooth cavosurface margins, smooth the concave areas of the occlusal surface, and remove scratches and graininess.
 2. Rotary Discs: These discs range from coarse to very fine and come in a variety of abrasives that vary in hardness. They are used on the convex surfaces of the facial/buccal and lingual/palatal as well as interproximally. It is often necessary to reverse the direction of the disc while using it interproximally to avoid grabbing which causes loss of control of the disc and can result in hard or soft tissue injury.
- B. Explain the use of the three polishing agents available for amalgam restorations.
 1. Pumice: Fine grades of this material are used to remove the largest of the remaining scratches in the surface of the restoration after the finishing procedures

are completed. It is mixed with water to form a pumice slurry. Several grits are available and should be used with the principle in mind that one progresses from the coarsest to the finest. It is applied to the amalgam with a rubber prophyl cup and results in a satiny shine.

2. Tin oxide: This material is the last of the polishing materials to be used in the polishing of amalgam. It can be used by mixing with water or ethyl alcohol, or it can be used dry. It is applied to the amalgam in a rubber prophyl cup and results in a mirror like finish.
3. Shofu® polishing points and cups: These points and cups are rubber rotary instruments designed to be used in place of pumice and tin oxide. They come in three grits named Brownies®, Greenies®, and Super Greenies®. Care should be taken while using them so as not to generate excess heat which can damage the pulp of the tooth and will bring mercury to the surface of the amalgam resulting in diminished shine of the final polish.

C. List the thirteen step sequence for finishing and polishing amalgam restorations.

1. Review the procedure with the patient.
2. Evaluate restoration to be finished and polished.
3. Check the occlusion of the restoration using articulation paper.
4. Isolate the restoration using rubber dam/cotton roll.
5. Smooth the occlusal cavosurface margins.
6. Smooth the occlusal surface.
7. Smooth proximal cavosurface margins and surface using finishing discs.
8. Smooth facial and lingual surfaces.
9. Polish the restoration using pumice/tin oxide or abrasive polishing points and cups.
10. Rinse and evacuate all debris.
11. Evaluate polished amalgam.
12. Recheck the occlusion and final polish.
13. Chart entry.

Part II: Polishing Composite Restorations

Intended Outcome

Given information about the reasons and concerns for polishing composite restorations, filling maintenance, and the basic procedure for polishing composite restorations, overall the student must demonstrate at least 80% accuracy the didactic examination.

Tasks

Number of tasks to master = 27

2.04 Reasons and Concerns for Polishing Composite Restorations

- A. State three reasons why a composite restoration should be polished.
 - 1. The filling should be highly polished to reduce the surface roughness and make the tooth as cleanable as possible.
 - 2. The filling should be polished to make it more resistant to food particles adhering to its surface.
 - 3. The filling should be polished to ensure that its margins are sealed to guard against microleakage between the restoration and the tooth structure.
- B. State five criteria for a serviceable composite restoration that can be (indicating) polished.
 - 1. The interproximal contacts are correctly adapted to the adjacent teeth.
 - 2. The occlusal contact is correct or can be adjusted without adding to or replacing the restoration.
 - 3. There is no evidence of microleakage at the margins.
 - 4. There is no evidence of ditching or microfracturing at the margins.
 - 5. There is no evidence of impact fracturing.
- C. List five principles of polishing.
 - 1. Abrasive agents are used from coarsest to finest.
 - 2. Particle hardness, size, and shape determine abrasiveness.
 - 3. Clean thoroughly between each abrasive.
 - 4. The pressure and speed used affect abrasiveness and heat production.
 - 5. Heat production is potentially dangerous.
- D. List and explain four precautions that must be taken during the polishing procedure.
 - 1. Maintain functional anatomy by using the instruments in the correct manner.

- i. Start all rotary instruments prior to touching the restoration.
 - ii. Keep instruments moving over the surface.
 - iii. Use short overlapping strokes to minimize friction.
 - iv. Use each instrument only on the surfaces for which it was designed.
 - v. Do not use at an acute angle.
2. Prevent damage to the patient's soft tissue.
 - i. Retract the tongue, cheeks, and lips during the procedure.
 - ii. Position instruments correctly as to not abrade the soft tissue.
 - iii. Use a secure grasp and stable fulcrum with each instrument.
 - iv. Rinse all abrasive materials from the mouth after polishing.
3. Protect the patient from polishing debris.
 - i. Remove excess abrasive material from the mouth as quickly as possible.
 - ii. Provide eye protection for the patient.
 - iii. Do not carry instruments or abrasive materials over the patient's face.
4. Protect the pulp of the tooth from excess heat.
 - i. Use air or water cooling streams whenever possible.
 - ii. Run rotary instruments at the minimum speed that will still be effective.
 - iii. Use intermittent contact of the rotary instruments to the tooth surface.

2.05 Filling Maintenance

- A. Explain what three parts of a filling must be maintained while polishing to avoid rendering the restoration non-serviceable.
1. The interproximal contacts must be maintained.
 2. No centric occlusion or direct intercuspation should occur on the composite's occlusal surface.
 3. The occlusal anatomy must be maintained as close to the optimal tooth morphology as possible. Though the dental assistant can evaluate the occlusal morphology, the adjustment would require the use of a high speed handpiece and finishing burs or the addition of composite material, the actual adjustment must be performed by the supervising dentist.

2.06 Basic Procedure for Polishing Composite Restorations

A. List and explain (if applicable) the five step procedure for polishing composite restorations.

1. The armamentarium is obtained and prepared.
 - i. PPE
 - ii. Slow speed handpiece
 - iii. Appropriate mandrels and discs, cups, or points for the particular system of abrasive polishing materials to be used
 - iv. Diamond polishing paste
 - v. Mouth mirror
 - vi. Explorer
 - vii. Air/water syringe
 - viii. Articulating paper and holder
 - ix. Finishing strips
 - x. White stone
 - xi. Prophy angle
 - xii. Prophy cup
 - xiii. 2 x 2 gauze and cotton rolls
 - xiv. Unfilled resin bonding agent or a commercial composite sealer
 - xv. Curing light
2. The restoration is polished by performing thirteen steps.
 - i. The coarse disc is placed on the mandrel and the convex areas of the restoration are polished to a uniform smoothness with no obvious deep scratches or gouges.
 - ii. The coarse points or cups are placed on the mandrel and the concave areas of the restoration are polished to a uniform smoothness with no obvious deep scratches or gouges.
 - iii. The articulating paper is used to ensure that the optimal occlusal contacts have not been lost.
 - iv. The medium disc, cup, or point is then used as above, but the result should be significantly glossier.
 - v. The articulating paper is again used to ensure the occlusal contacts are still undisturbed.

- vi. The fine and very fine discs, cups, or points are then used in order to achieve the smoothest and glossiest surface possible.
 - vii. Again the articulating paper is used between each grit size.
 - viii. The prophylaxis angle and a prophylaxis cup are attached to the handpiece and a small amount of the diamond polishing paste is dispensed into a dampen dish and carried to the restoration.
 - ix. The restoration is then polished to a high luster with the diamond polishing paste.
 - x. The restoration is washed.
- Optional final steps:
- xi. The restoration and the cavosurface margins of the restoration are re-etched with 30% to 37% phosphoric acid gel for 15 seconds and thoroughly rinsed with copious amounts of water for 10 seconds.
 - xii. Unfilled resin (bonding agent) or a commercially prepared composite sealer is brushed over the entire surface of the restoration and the cavosurface margins.
 - xiii. The sealer is then air thinned with the air/water syringe and cured for 10 to 20 seconds with the curing light.
- 3. Reevaluate the restoration polish to ensure it is still serviceable.
 - i. The student will again go through the steps of evaluating the restoration as above.
 - 4. The supervising instructor checks the restoration polish.
 - 5. The patient is released and the procedure is recorded in the patient chart.

Clinical Education

Polishing Amalgam Restorations Procedure

Intended Outcome

Given the necessary supplies and equipment for finishing and polishing amalgam restorations, the student will perform the following tasks on two, Class II amalgams in typodont or natural teeth with 100% accuracy.

Tasks

Number of tasks to master = 38

Setup and Patient Preparation

1. Take universal precautions.
2. Assemble the finishing and polishing amalgam restorations tray set up. In an actual office practice you may find some of these items are not used.
 - a. Mouth mirror
 - b. Explorer
 - c. Cotton pliers
 - d. Slow speed handpiece
 - e. Cotton rolls or other isolation materials
 - f. High volume evacuator
 - g. Saliva ejector
 - h. 3-way syringe tip
 - i. Round finishing bur (#4 or #6)
 - j. Abrasive rotary disc (medium)
 - k. Mandrel for the disc
 - l. Articulating paper
 - m. Articulating paper holder
 - n. Dental floss
3. Seat the patient.
4. Review the patient's medical history. Medical history is reviewed with parent if the patient is a minor.

5. Explain the dental procedure to the patient.
6. Add the following ten items to the above armamentarium list to polish an amalgam restoration with pumice and tin oxide or Shofu® points:
 - a. Prophyl angle
 - b. Two prophyl cups
 - c. Flour of pumice
 - d. Tin oxide powder (anhydrous)
 - e. Dental tape
 - f. Ethyl alcohol, and
 - g. Dappen dish.
- OR
- a. Brownie® points and cup
- b. Greenie® points and cups, and
- c. Super Greenie® points and cups.
7. Evaluate the selected restoration for polishing.
8. Check occlusion.

Polishing the Restoration

1. Isolate the tooth with the restoration to be polished by cotton rolls or a rubber dam.
2. Place the #4 or #6 round finishing bur in the slow speed handpiece and use it to smooth the occlusal cavosurface margins. Half of the bur should rest on the enamel and half should rest on the amalgam surface. Movement should be a smooth sweeping stroke of the bur running in reverse and repeated until a satiny, uniform surface is obtained, free of deep scratches.
3. Smooth the occlusal surface. Work in several small areas until the entire surface is uniform using the same sweeping, intermittent stroke.
4. Place the mandrel for the rotary abrasive disc in the slow-speed handpiece, attach the disc, and proceed to finish the interproximal areas. The handpiece should be set so the disc spins away from the soft tissue to prevent inadvertent gingival injury.
5. Smooth the facial and lingual surfaces of the restoration. Use an abrasive disc to smooth the convex surfaces. Use a finishing bur to smooth the concave surfaces.
6. Mix the flour of pumice to a creamy consistency in a dappen dish.

7. Using a prophy cup on a prophy angle, pumice all the restoration surfaces. The handpiece should be used in intermittent strokes at a slow rate in order to avoid the buildup of friction.
8. Determine when the pumicing step is finished by the satiny smooth appearance of the restoration. The restoration will appear to be uniformly polished to a smooth, burnished appearance with no deep scratches or marring marks present.
9. Use the dental tape to pumice the interproximal surfaces of the restoration.
10. Rinse and floss all the residue of pumice from the mouth. Any remaining residue can damage the interproximal surfaces of teeth and can interfere with the polishing procedure.
11. Polish with tin oxide powder that has been mixed in a clean dappen dish with water or ethyl alcohol.
12. Use a new prophy cup to polish the restoration in order to prevent pumice residue in the cup from marring the new amalgam surface.
13. Use the same stroke that was used during the pumice procedure with the tin oxide but with the handpiece run at a faster speed.
14. Buff the tin oxide into the interproximal areas with dental tape.
15. Check the final polish. The restoration will have a mirror-like finish.
16. Rinse the residual tin oxide thoroughly from the mouth.
17. If it is desired, use dry tin oxide to exact an even higher shine.

OR

18. Polish with abrasive points and cups. Shofu® points and cups will be used for this procedure; however, there are other rubber or silicone abrasive polishing point and cup systems available.
19. Place the Brownie® cup in the handpiece and run at a slow speed over all convex surfaces of the restoration.
20. Employ an on-and-off motion while using all abrasive points/cups in order to avoid overheating the tooth.
21. Place the Brownie® point in the slow speed handpiece and run in the same manner as the cup in the concave surfaces of the restoration.
22. Check to make sure that the surface appears velvety smooth, with no individually noticeable scratches.

23. Rinse thoroughly. A Greenie® cup (and then point) and then Super Greenie® (and then point) is used in the same fashion that the Brownie® cup and point were used. The surface should again appear uniformly polished with no obvious scratches or pits. It should appear much shinier. If the amalgam is allowed to heat excessively at this point, mercury will rise to the surface which will compromise the final shine and weaken the surface.
24. Check to make sure that the restoration has a mirror-like finish.
25. Clear the oral cavity of all debris from the finishing and polishing procedure.

Evaluation and Charting

1. Evaluate the polished tooth to determine if the crucial parts of the filling have been preserved in the polishing procedure.
2. The date is recorded.
3. The entry is written in ink.
4. Student signs record of services.
5. Instructor will evaluate the polished restoration and initial the record of services.

Part III: Polishing Composite Restorations Procedure

Intended Outcome

Given the necessary supplies and equipment to polish composite restorations, the student will perform the following tasks on two, Class II composites in typodont or natural teeth with 100% accuracy.

Tasks

Number of tasks to master = 29

Setup and Patient Preparation

1. Take universal precautions.
2. Assemble the polishing composite restorations tray set up. In an actual office practice you may find some of the items are not used.
 - a. PPE
 - b. Mouth mirror

- c. Explorer
 - d. Slow-speed handpiece
 - e. Appropriate mandrels and discs, cups, or points for the particular system of abrasive polishing materials to be used
 - f. Diamond polishing paste
 - g. Air/water syringe
 - h. Articulating paper and holder
 - i. Finishing strips
 - j. White stone
 - k. Prophylaxis angle
 - l. Prophylaxis cup
 - m. 2 x 2 inch gauze
 - n. Cotton rolls
 - o. Unfilled resin bonding agent or a commercial composite sealer
 - p. Curing light
3. Seat the patient.
 4. Review the patient's medical history. Medical history is reviewed with parent if the patient is a minor.
 5. Explain the dental procedure to the patient.
 6. Determine if the restoration is acceptable for polishing.
 7. Check occlusion.

Polishing Procedure

1. The coarse disc is placed on the mandrel and the convex areas of the restoration are polished to a uniform smoothness with no obvious deep scratches or gouges.
2. The coarse points or cups are placed on the mandrel and the concave areas of the restoration are polished to a uniform smoothness with no obvious deep scratches or gouges.
3. Using the articulating paper, check to ensure that the optimal occlusal contacts have not been lost.
4. The medium disc and cup or point is then used in a like manner as above. The result should be significantly glossier.
5. Check to ensure the occlusal contacts are still undisturbed.

6. Using fine and very fine discs and cups or points to achieve the smoothest and glossiest surface possible.
7. Check to ensure the occlusal contacts are still undisturbed.
8. The prophyl angle and a prophyl cup are attached to the handpiece and a small amount of the diamond polishing paste is dispensed into a dappen dish and carried to the restoration.
9. The restoration is then polished to a high luster with the diamond polishing paste.
10. The restoration is rinsed and dried.

a) Optional Steps

11. The restoration and the cavosurface margins of the restoration are re-etched with 30% to 37% phosphoric acid gel for 15 seconds and thoroughly rinsed with copious amounts of water for 10 seconds.
12. Unfilled resin (bonding agent) or a commercially prepared composite sealer is brushed over the entire surface of the restoration and the cavosurface margins.
13. The sealer is then air thinned with the air/water syringe and cured for 10 to 20 seconds with the curing light.

Evaluation and Charting

1. Evaluate the polished tooth to determine if the crucial parts of the filling have been preserved in the polishing procedure.
2. Check if the interproximal contacts of the restoration have been maintained.
3. Check that contours have been maintained.
4. Check if the occlusal contact is adequate in centric occlusion.
5. Check the restoration surface to ensure the polish has been performed accurately and if there have been any inadvertent gouges or scratches introduced during the polishing process.
6. The date is recorded.
7. The entry is written in ink.
8. Student signs record of services.
9. Instructor evaluates the polished restoration and initials the record of services.

Competency-Based Practice Evaluation

Finishing and Polishing Amalgam Restorations Procedure

Student Name: _____

Lab Evaluator: _____ Date: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary supplies and equipment for finishing and polishing amalgam restorations, the student will perform the following tasks on two, Class II amalgam restorations in typodont or natural teeth with 100% accuracy. The student will perform the following tasks on one Class II amalgam restoration on the final clinical evaluation.

		Polish Amalgam Practice		Polish Amalgam Practice	
	Tasks	Pass	Fail	Pass	Fail
Setup and Patient Preparation					
1	Take universal precautions.				
2	Assemble the finishing and polishing amalgam restorations procedure tray set up. In an actual office practice you may find some of these items are not used. a. Mouth mirror b. Slow-speed handpiece c. Cotton rolls d. Cotton pliers e. High volume evacuator f. Saliva ejector g. 3-way syringe h. Round finishing bur (#4 or #6) i. Abrasive rotary disc (medium) h. Mandrel for the disc i. Articulating paper j. Articulating paper holder k. Dental floss				
3	Seat the patient and place patient bib.				
4	Review patient’s medical history. If patient is a minor, review medical history with the parent or guardian of the patient.				
5	Explain the procedure to the patient.				
6	Add the following ten items to the above armamentarium list to polish an amalgam restoration with pumice and tin oxide/Shofu® points: a. Prophyl angle b. Two prophyl cups c. Flour of pumice d. Tin oxide powder (anhydrous) e. Dental tape				

		Polish Amalgam Practice		Polish Amalgam Practice	
	Tasks	Pass	Fail	Pass	Fail
	f. Ethyl alcohol, and g. Dappen dish. OR a. Brownie® points and cups, b. Greenie® points and cups, and c. Super Greenie® points and cups.				
7	Evaluate the selected restoration for polishing.				
8	Check the occlusion by first, drying the teeth, and then, having the patient tap his teeth together on articulating paper held with the articulating paper holder.				
Polishing the Restoration					
1	Isolate the tooth with the restoration to be polished by cotton rolls or a rubber dam.				
2	Place the #4 or #6 round finishing bur in the slow speed handpiece and use it to smooth the occlusal cavosurface margins.				
3	Smooth the occlusal surface.				
4	Place the mandrel for the rotary abrasive disc in the slow speed handpiece, attach the disc, and proceed to finish the interproximal areas.				
5	Smooth the facial and lingual surfaces of the restoration. Use an abrasive disc for convex surfaces and a finishing bur for concave surfaces.				
6	Mix the flour of pumice to a creamy consistency in a dappen dish.				
7	Using a prophyl cup on a prophyl angle, pumice all the restoration surfaces.				
8	Determine when the pumicing step is finished by the satiny smooth appearance of the restoration.				
9	Use the dental tape to pumice the interproximal surfaces of the restoration.				
10	Rinse and floss all the residue of pumice from the mouth.				
11	Polish with tin oxide powder that has been mixed in a clean dappen dish with water or ethyl alcohol.				
12	Use a new prophyl cup to polish the restoration in order to prevent pumice residue in the cup from marring the new amalgam surface.				
13	Use the same stroke that was used during the pumice procedure with the tin oxide but with the handpiece run at a faster speed.				
14	Buff the tin oxide into the interproximal areas with dental tape.				
15	Check the final polish. The restoration will have a mirror-like finish.				
16	Rinse the residual tin oxide thoroughly from the mouth.				
17	If it is desired, use dry tin oxide to exact an even higher shine.				
	OR				
18	Polish with abrasive points and cups.				

		Polish Amalgam Practice		Polish Amalgam Practice	
	Tasks	Pass	Fail	Pass	Fail
19	Place the Brownie® cup in the handpiece and run at a slow-speed over all convex surfaces of the restoration.				
20	Employ an intermittent stroke while using all abrasive points/cups in order to avoid overheating the tooth.				
21	Place the Brownie® point in the slow speed handpiece and run in the same manner as the cup in the concave surfaces of the restoration.				
22	Check to make sure that the surface appears velvety smooth, with no individually noticeable scratches.				
23	First, place a Super Greenie® point and then a Super Greenie® cup in the slow speed handpiece and, with the same intermittent stroke, run at the highest speed possible with the slow speed handpiece.				
24	Check to make sure that the restoration has a mirror-like finish.				
25	Clear the oral cavity of all debris from the finishing and polishing procedure.				
Evaluation and Charting					
26	Evaluate the polished tooth to determine if the crucial parts of the filling have been preserved in the polishing procedure.				
27	The date is recorded.				
28	The entry is written in ink.				
29	Student signs record of services.				
30	Instructor will evaluate polished restoration and initial the record of services.				
Comments:					

Competency-Based Practice Evaluation

Polishing Composite Restoration

Student Name: _____

Lab Evaluator: _____ Date: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary supplies and equipment to polish composite restorations, the student will perform the following tasks on two, Class II composite restorations on typodont or natural teeth with 100% accuracy. The student will perform the following tasks on one natural tooth with a Class II posterior composite restoration on the final clinical examination.

Time allotment: 30 minutes

		Polish Composite Practice		Polish Composite Practice	
	Tasks	Pass	Fail	Pass	Fail
Setup and Patient Preparation					
1	Take universal precautions.				
2	Assemble the polishing composite restorations tray setup. In an actual office practice you may find some of the items are not used. a. Slow speed handpiece b. Appropriate mandrels and discs, cups, or points for the particular system of abrasive polishing materials to be used c. Diamond polishing paste d. Mouth mirror e. Explorer f. Air/water syringe g. Articulating paper and holder h. Finishing strips i. White stone j. Prophyl angle k. Prophyl cup l. 2 x 2 inch gauze m. Cotton rolls n. Unfilled resin bonding agent or a commercial composite sealer o. Curing light				
3	Seat the patient in the dental chair and place patient bib.				
4	Review patient’s medical history. If patient is a minor, review medical history with the parent or guardian of the patient.				

		Polish Composite Practice		Polish Composite Practice	
	Tasks	Pass	Fail	Pass	Fail
5	Explain the procedure to the patient.				
6	Determine if the restoration is acceptable for polishing.				
7	Check occlusion.				
Polishing the Restoration					
1	The coarse disc is placed on the mandrel and the convex areas of the restoration are polished until they have reached a uniform smoothness with no obvious deep scratches or gouges.				
2	The coarse points or cups are placed on the mandrel and the concave areas of the restoration are polished to a uniform smoothness with no obvious deep scratches or gouges.				
3	Using the articulating paper, check to ensure that the optimal occlusal contacts have not been lost.				
4	The medium disc and cup or point is then used in a like manner as above.				
5	Check to ensure the occlusal contacts are still undisturbed.				
6	Using fine and very fine discs and cups or points to achieve the smoothest and glossiest surface possible.				
7	Check to ensure the occlusal contacts are still undisturbed.				
8	The prophy angle and a prophy cup are attached to the handpiece and a small amount of the diamond polishing paste is dispensed into a dampen dish and carried to the restoration.				
9	The restoration is then polished to a high luster with the diamond polishing paste.				
10	The restoration is rinsed and dried.				
	Optional Steps				
11	The restoration and the cavosurface margins of the restoration are re-etched with 30% to 37% phosphoric acid gel for 15 seconds and thoroughly rinsed with copious amounts of water for 10 seconds.				
12	Unfilled resin (bonding agent) or a commercially prepared composite sealer is brushed over the entire surface of the restoration and the cavosurface margins.				
13	The sealer is then air thinned with the air/water syringe and cured for 10 to 20 seconds with the curing light.				
Evaluation and Charting					
14	Evaluate the polished tooth to determine if the crucial parts of the filling have been preserved in the polishing procedure.				
15	Check if the interproximal contacts of the restoration have been maintained.				
16	Check if the occlusal contact is adequate in centric occlusion.				
17	Check that contours have been maintained.				
18	Check the restoration surface to ensure the polish has				

		Polish Composite Practice		Polish Composite Practice	
	Tasks	Pass	Fail	Pass	Fail
	been performed accurately and if there have been any inadvertent gouges or scratches introduced during the polishing process.				
19	The date is recorded.				
20	The entry is written in ink.				
21	Student signs record of services.				
22	Instructor evaluates the polished restoration and initials the record of services.				
Comments:					

Clinical Requirements Completed

Polishing Amalgam and Composite Restorations

Each student is required to complete polishing of two, Class II restorations each of amalgam and composite.

	Dentist Signature	Date
	Amalgam	
1.		
2.		
	Composite	
1.		
2.		

CLINICAL REQUIREMENT

FORMS TO BE SUBMITTED TO CLINICAL EXAMINER AT FINAL EXAMINATION

Competency-Based Clinical Final Evaluation

Polishing an Amalgam Restoration-Product

Student Name: _____

Evaluator: _____

Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary personnel, supplies and equipment to polish a Class II posterior amalgam restoration, the student will perform the following tasks on one typodont or natural tooth with 85% accuracy on the final examination (16 points out of 18).

Time allotment: 30 minutes

Grading Criteria			
	2 = Acceptable	1 = Improvable	0 = Unacceptable
1	Crown contact the adjacent teeth		0-2
	a. Mesial		
	b. Distal		
2	Contours are maintained in the same plane as adjacent teeth.		
	a. Facial		
	b. Lingual		
	c. Occlusal/incisal		
3	Restoration is smooth, there are no gouges or scratches.		
4	No ditching or microfractures at the margins.		
5	No damage to adjacent teeth or tissue.		
6	Restoration is highly polished.		
7	All excess abrasive is removed.		
Total			
Comments:			

Competency-Based Clinical Final Evaluation

Polishing a Composite Restoration - Product

Student Name: _____

Evaluator: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary personnel, supplies and equipment to polish a Class II posterior composite restoration, the student will perform the following tasks on one typodont or natural tooth with 85% accuracy on the final examination (16 points out of 18).

Time allotment: 30 minutes

Grading Criteria				
	2 = Acceptable	1 = Improvable	0 = Unacceptable	0-2
1	Crown contact the adjacent teeth			
	a. Mesial			
	b. Distal			
2	Contours are maintained in the same plane as adjacent teeth.			
	a. Facial			
	b. Lingual			
	c. Occlusal/incisal			
3	Restoration is smooth, there are no gouges or scratches.			
4	No ditching or microfractures at the margins.			
5	No damage to adjacent teeth or tissue.			
6	Restoration is highly polished.			
7	All excess abrasive is removed.			
Total				
Comments:				

SECTION 3.0 Application of Pit and Fissure Sealants

Didactic Education

Intended Outcome

Given information about pit and fissure sealants, overall the student must demonstrate at least 80% accuracy on the didactic examination.

Tasks

Number of tasks to master = 91

3.01 Pit and Fissure Sealants

A. Define sealants.

1. Pit and fissure sealant: A resin material introduced into the pits and fissures of teeth susceptible to caries act as a physical barrier to bacteria. Applied to the occlusals of posterior permanent and primary teeth including buccal pits and lingual grooves. The lingual pits of maxillary anterior teeth may also be sealed.

B. List the four characteristics of sealant retention.

1. Retention requires a strong mechanical bond.
2. 99% effective when retained. No decay will develop underneath.
3. Rates vary greatly.
4. Highest retention on mandibular newly erupted first molars.

C. Describe the three principal types of pit and fissure configurations.

1. U-type: Wider opening
2. V-type: Narrower opening
3. I-type: Bottleneck shape

D. List two types of sealants.

1. Filled: Bis-GMA - fillers
2. Unfilled: Bis-GMA-MMA (most common)

E. List the four characteristics of light-cure sealants.

1. One liquid system, no mixing
2. Operator has control of polymerization
3. Requires light-cure unit (expensive)
4. Short shelf life

F. List the four characteristics of self-cure sealants.

1. Simple to use
2. No extra equipment (less expensive)
3. Once mix has started must complete procedure
4. Bubbles and incomplete mixing can occur during mix

G. List nine considerations of acid etching materials.

1. Creates surface irregularities that increase retention
2. 30% to 70% phosphoric acid (35% to 37% most common)
3. Applied 10 to 60 seconds (30 to 60 seconds most common)
4. Applied 2-3mm past sealant
5. Must protect oral tissue, eyes, and skin
6. Liquid dabbed on, gel let set
7. Contraindicated after fluoride treatment
8. Etched tooth should appear chalky white, frost, and dull
9. Etched tooth must be protected from saliva

3.02 Placement of Pit and Fissure Sealants

A. List the five indications for sealant placement.

1. A deep fissure, fossa, or pit is present, especially if it catches the tip of the explorer.
2. The fossa selected for sealant placement is well isolated from another fossa with a restoration present.
3. An intact occlusal surface is present where the contra lateral tooth surface is carious or restored.
4. No radiographic evidence of decay.
5. Newly erupted teeth.

B. List the four contraindications for placing sealants.

1. Patient behavior does not permit use of adequate dry field techniques throughout the procedure.
2. There is an open occlusal carious lesion.
3. Caries, particularly proximal lesions, exist on other surfaces of the same tooth.
4. A large occlusal restoration is already present.

C. List the five important instructions given to the patient or parent of the child prior to placement of sealants.

1. Sealants only help prevent caries on the tooth surfaces where the sealants are applied.
 2. Plaque control, fluoride therapy, and sugar discipline are still necessary.
 3. Life expectancy of sealants will vary from patient to patient.
 4. Contact the office if there is any sign of breakage or loss.
 5. The sealant will be monitored at each 6 month recall appointment.
- D. List the three most important ages to seal primary and permanent teeth. These ages correspond with normal eruption patterns.
1. Age 3 to 4 years for primary molars
 2. Age 6 to 8 years for first permanent molars
 3. Age 11 to 13 years for second permanent molars
- E. Describe the three reasons adults are considered for sealants.
1. When there is evidence of impending caries susceptibility. For example if a patient is undergoing radiation therapy or other disease-related treatments.
 2. Drug-induced xerostomia.
 3. Excessive intake of sugar.
- F. List the twelve armamentarium supplies and instruments needed for placing a sealant.
1. Basic tray setup including bib and 3-way syringe
 2. Evacuator tips
 3. Isolation materials
 - i. 2 x 2 gauze
 - ii. Cotton rolls
 - iii. Cotton pellets
 - iv. Rubber dam or garmer clamps
 4. Slow speed handpiece
 5. Prophylaxis brush
 6. Flour of pumice
 7. Acid etch, brush, or syringe
 8. Sealant material, sealant applicator
 9. Curing light
 10. Dental floss
 11. Articulating paper
 12. Fluoride

G. List the fifteen steps in sealant application.

1. Confirm the tooth to be sealed
2. Pumice and rinse tooth
3. Remove pumice with explorer and rinse again
4. Isolate tooth
5. Dry and acid etch tooth for 60 seconds
6. Rinse for 20 to 30 seconds
7. Re-isolate tooth
8. Dry for 20 seconds and check for an opaque/frost appearance of the tooth
9. Apply sealant material to the tooth
10. Cure
11. Check for voids or bubbles in the sealant
12. Check the occlusion for high spots
13. Apply fluoride to the tooth
14. Give post-operative instructions to patient
15. Chart entry

H. Describe the six most common technical errors when placing a sealant.

1. Contamination by either saliva or calcium phosphate products.
2. Inadequate surface preparation from improper cleansing or application of the acid etch.
3. Using outdated materials.
4. Air entrapment due to poor placement technique.
5. Over extension of the material beyond the conditioned tooth surface.
6. Incomplete/slow mix or application of self-cure sealant.

I. Describe the five steps in checking occlusion.

1. Dry tooth thoroughly.
2. Place articulation paper on the tooth that has been sealed.
3. Have patient tap teeth together and slide mandible from side to side.
4. If there are heavy markings, use a finishing bur to make any adjustment.
5. If there are only light markings, explain to the patient that the feeling of “high” will go away in a few days.

J. State the reason for post sealant fluoride treatment.

1. The etching process has dehydrated the tooth. Therefore, the tooth is subject to injury and bacteria for approximately 24 hours. Fluoride provides the necessary protection for the tooth during this period of time.

K. Record the appropriate sealant procedure in the patient's chart.

1. Date entry of procedure. All entries are made with blue or black ink or entered on a digital patient record.
2. Chart the complete procedure in the patient's record, including all tooth numbers
3. Student initials or signs record of services according to agency policy
4. Instructor evaluates sealant and initials the record of services

Clinical Education

Intended Outcome

Given the required armamentarium, didactic information and a dental unit, the student will perform the following tasks on three permanent maxillary molars and three permanent mandibular molars with 100% proficiency.

Tasks

Number of tasks to master = 31

Prepare Setup

1. Take universal precautions.
2. Assemble the pit and fissure sealant tray setup. In an actual office practice you may find some of the items are not used.
 - a. Patient bib and 3-way syringe
 - b. Evacuator tips
 - c. Isolation materials
 - i. 2x2 gauze
 - ii. Cotton rolls
 - iii. Cotton pellets
 - d. Rubber dam or garmer clamps
 - e. Slow speed handpiece
 - f. Prophylaxis brush
 - g. Flour of pumice
 - h. Acid etch, brush, or syringe
 - i. Sealant material, sealant applicator
 - j. Curing light
 - k. Dental floss
 - l. Articulating paper
 - m. Fluoride

Prepare Patient

1. Seat the patient in the dental chair and place patient bib.

2. Review patient's medical history. If patient is a minor, review medical history with the parent or guardian of the patient.
3. Explain sealant procedure to the patient.
4. Place protective eyewear on the patient.
5. Select and check the teeth that have been diagnosed for sealants by a dentist. A signed permission slip is mandatory.

Sealant Procedure

1. Pumice surface(s) of each tooth designated with a disposable prophylaxis brush on a slow speed handpiece.
2. Using the 3-way syringe, rinse the tooth thoroughly for 15 to 20 seconds.
3. Check the tooth surface with an explorer for any remaining pumice. Remove and rinse again if necessary.
4. Isolate the tooth by using a rubber dam or cotton rolls with or without a gauze clamp. Dry thoroughly.
5. Apply acid etch to the tooth for 10 to 60 seconds (see manufacturer's directions). The etch should be applied 2-3mm beyond the area to be sealed. Deciduous teeth should be etched for up to 60 additional seconds.
6. Rinse the tooth for 20 to 30 seconds using a steady stream of water or spray. Hold the HVE close to the tooth when rinsing off the acid etch.
7. Re-isolate tooth again (if needed) being careful not to contaminate it with saliva or other debris.
8. Dry tooth for 20 to 30 seconds and check etched surface for opacity prior to continuing the process.
9. Apply sealant material to the prepared pits and grooves of the tooth using the technique in which you were taught.
10. Activate polymerization with the curing light for up to 60 seconds.
11. Check completed application of the sealant with an explorer.
12. Reapply sealant material to any area that did not fully seal or exhibits a 'bubble' or other defect. Adding more sealant material without re-etching is permissible if tooth remains uncontaminated.
13. If re-application is necessary, follow the same curing procedure.
14. Rinse tooth gently with water or wipe with a cotton pellet.

15. Remove isolation materials.
16. Check patient's occlusion with articulating paper.
17. Inform the patient if the occlusion needs to be adjusted. Adjust occlusion as necessary with a finishing bur in the slow speed handpiece.
18. Apply fluoride to the tooth that has been sealed.
19. Give post-operative instructions to the patient regarding the importance of evaluating the sealants every 6 months.

Evaluation and Charting

- 1.) Date entry of procedure. All entries are made with blue or black ink or entered on a digital patient record.
- 2.) Chart the complete procedure in the patient's record, including all tooth numbers
- 3.) Student initials or signs record of services according to agency policy
- 4.) Instructor evaluates sealant and initials the record of services

Competency-Based Practice Evaluation

Pit and Fissure Sealants

Student Name: _____

Lab Evaluator: _____ Date: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the required armamentarium, didactic information and a dental unit, the student will perform the following tasks on three permanent maxillary molars and three permanent mandibular molars with 100% proficiency. The student will perform the following tasks on one permanent molar tooth with 85% accuracy on the final examination.

Time allotment: 30 minutes

		Practice Evaluation		Practice Evaluation	
	Tasks	Pass	Fail	Pass	Fail
Prepare Setup					
1	Take universal precautions.				
2	Assemble the pit and fissure procedure tray setup. In an actual office practice you may find some of these items are not used. a. Patient bib and 3-way syringe b. Evacuator tips c. Isolation materials i. 2x2 gauze, ii. cotton rolls, and iii. cotton pellets d. Rubber dam or Garmer clamps e. Slow speed handpiece f. Prophylaxis brush g. Flour of pumice h. Acid etch, brush, or syringe i. Sealant material, sealant applicator j. Curing light k. Dental floss l. Articulating paper m. Fluoride				
Prepare Patient					
1	Seat the patient and place patient bib.				
2	Review patient's medical history. If patient is a minor, review medical history with the parent or guardian of the patient.				
3	Explain the procedure to the patient.				
4	Place protective eyewear on the patient.				

		Practice Evaluation		Practice Evaluation	
	Tasks	Pass	Fail	Pass	Fail
5	Select and check the teeth that have been diagnosed for sealants by a dentist. A signed permission slip is mandatory.				
Sealant Procedure					
1	Pumice surface(s) of each tooth designated with a disposable prophyl brush on a slow speed handpiece.				
2	Using the 3-way syringe, rinse the tooth thoroughly for 15 to 20 seconds.				
3	Check the tooth surface, with an explorer, for any remaining pumice. Remove and rinse again if necessary.				
4	Re-isolate the tooth as needed and dry thoroughly.				
5	Apply acid etch to the tooth for 20 to 60 seconds. The etch should be applied 2-3mm beyond the area to be sealed. Deciduous teeth should be etched for up to 60 seconds.				
6	Rinse the tooth for 20 to 30 seconds using a steady stream of water or spray. Hold the HVE close to the tooth when rinsing off the acid etch.				
7	Re-isolate tooth again (if needed) being careful not to contaminate it with saliva or other debris.				
8	Dry tooth for 10 to 20 seconds and check etched surface for opaqueness prior to continuing the process.				
9	Apply sealant material to the prepared pits and grooves of the tooth using the technique in which you were taught.				
10	Activate polymerization with the curing light for up to 60 seconds.				
11	Check completed application of the sealant with an explorer.				
12	Re-apply sealant material to any area that did not fully seal or exhibits a 'bubble' or other defect. Adding more sealant material without re-etching is permissible if tooth remains uncontaminated.				
13	If re-application is necessary, follow the same curing procedure.				
14	Rinse tooth gently with water or a cotton pellet.				
15	Remove isolation materials.				
16	Check patient's occlusion with articulating paper.				
17	Inform the patient if the occlusion needs to be adjusted. Adjust occlusion as necessary with a finishing bur in the slow speed handpiece.				
18	Apply fluoride to the tooth that has been sealed.				
19	Give post-operative instructions to the patient regarding the importance of evaluating the sealants every 6 months.				
Evaluation and Charting					
1	Chart the complete procedure in the patient's chart.				
2	The date is recorded.				
3	The entry is written in ink.				
4	Student signs record of services.				

		Practice Evaluation		Practice Evaluation	
	Tasks	Pass	Fail	Pass	Fail
5	Instructor initials the record of services.				
Comments:					

Clinical Requirements Completed

Application of Pit and Fissure Sealants

Each student is required to complete six acceptable sealants. This is to be supervised by a dentist.
Consent/permission slips required.

	Dentist Signature	Date
1.		
2.		
3.		
4.		
5.		
6.		

CLINICAL REQUIREMENT

FORMS TO BE SUBMITTED TO CLINICAL EXAMINER AT FINAL EXAMINATION

Competency-Based Clinical Final Evaluation

Pit and Fissure Sealants - Product

Student Name: _____

Evaluator: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary personnel, supplies and equipment to place sealants, the student will perform the following tasks on one permanent molar tooth of an adult or pediatric patient with 85% accuracy on the final examination (28 points out of 34).

Time allotment: 30 minutes

Grading Criteria				
	2 = Acceptable	1 = Improvable	0 = Unacceptable	0-2
1	Maintains aseptic technique with universal precautions.			
2	Prepares patient (instructions, medical history, permission from dentist).			
3	Armamentarium is complete.			
4	Teeth are properly cleaned.			
5	Teeth are isolated and dried.			
6	Surfaces are properly etched.			
7	Etched teeth are rinsed well.			
8	Etched teeth are re-isolated and dried.			
9	Sealant is applied correctly.			
10	Sealant is cured correctly.			
11	Sealant is checked with explorer and exhibits proper seal.			
12	Sealant is reapplied and cured if needed.			
13	Occlusion is checked with articulating paper and adjusted if needed.			
14	Fluoride is applied to sealed teeth.			
15	Patient is given post-operative instructions.			
16	Sealants are charted and recorded accurately.			
Total				
Comments:				

SECTION 4.0 Coronal Polishing

Didactic Education

Intended Outcome

Given information about the definitions of polishing, implications of polishing, classification of stain, types of stain, laws and rules of the Idaho State Board of Dentistry, evaluation, assessment, cleaning and polishing agents, abrasion, application of abrasives, commonly used abrasives in dentistry, commercial preparations for polishing, armamentarium, and principles of polishing, overall the student must demonstrate at least 80% accuracy on the didactic examination.

Tasks

Number of tasks to master = 137

4.1 Definitions of Polishing

A. Define coronal or traditional polishing.

1. Coronal/traditional polishing: The use of a polishing agent on the crowns and root surfaces of teeth to remove bacterial plaque and extrinsic stains.

B. Define selective polishing.

1. Selective polishing: The removal of extrinsic stains from the surfaces of the teeth after instrumentation. Stain removal is for aesthetic reasons.

C. Define the goal of selective polishing.

1. To remove all the extrinsic stains from the teeth after instrumentation with minimal trauma to hard and soft tissue.

4.2 Implications of Polishing

A. Explain the effect of polishing on the enamel surfaces of demineralized teeth.

1. Three times more surface enamel is lost polishing on a de-mineralized surface versus polishing on intact enamel.

B. Explain why rotary instruments should be used with caution on a patient with a communicable disease.

1. Aerosols are created during polishing and remain suspended in the air for long periods of time. Greater risk for disease transmission.

C. Explain how too much heat production from polishing can damage tooth structure.

1. Hand pressure applied to the tooth with a rapidly moving rubber cup or brush and dry abrasive, can produce heat causing pain and discomfort for the patient.
- D. State two effects that can occur to the gingival tissue from improper polishing techniques.
 1. Particles from the polishing agents can be forced into the sulcus and cause irritation to the tissue if the cup is run at high speeds.
 2. Trauma to the gingiva can result when the rubber cup is placed too close to the gingival margin and run at high speeds. Severe inflammation can occur.
- E. Explain how the fluoride-rich surface on a tooth is removed.
 1. The outermost layer of the tooth contains the highest concentration of fluoride. Polishing can remove the fluoride-rich surface over time.

4.3 Classification of Stain

- A. Define extrinsic stain.
 1. Extrinsic stain: Occurs on the surface of the tooth and is associated with plaque.
- B. Define intrinsic stain.
 1. Intrinsic stain: Incorporated within the tooth structure and may be related to the period of tooth development.

4.4 Types of Stain

- A. List four types of extrinsic stains.
 1. Green stain
 2. Black line stain
 3. Tobacco stain
 4. Yellow/ orange stain
- B. List three types of intrinsic stain.
 1. Tetracycline stain
 2. Dental fluorosis
 3. Amelogenesis imperfecta

4.5 Laws and Rules of the Idaho State Board of Dentistry

- A. Define the meaning of dental assistant from the Idaho Code Statute.
 1. “dental assistant” is a person who need not be licensed/regulated under this chapter, but who is regularly employed by a dentist at their office, who works under the dentist’s direct supervision, and is adequately trained and qualified

according to standards established by the board to perform the dental services permitted to be performed by assistants by this chapter and applicable rules of the board.

B. Explain the role of the State Board of Dentistry.

1. To assure the public health, safety, and welfare in the state of Idaho by the licensure and regulation of dentists and dental hygienists.

C. Define the Administrative rule 35. 01. e. and g.v.

1. Prohibited Duties. Subject to other applicable provisions of these rules and of the Act, dental assistants are hereby prohibited from performing any of the activities specified below:
 - i. (e) Any oral prophylaxis. Oral prophylaxis is defined as the removal of plaque, calculus and stains from the exposed and unexposed surfaces of the teeth by scaling and polishing.
 - ii. (g) The following expanded functions, unless authorized by a Certificate of Registration or certificate or diploma of course completion issued by an approved teaching entity and performed under direct supervision...
 - iii. (v) Coronal polishing

4.6 Evaluation of Patient

A. List seven contraindications for polishing.

1. No stain is present
2. Increased risk of dental caries
3. Newly erupted teeth
4. Patient with respiratory problems
5. Tooth sensitivity
6. Restorations are present (i.e., gold, composite)
7. Xerostomia

B. State eight conditions that would require modification or postponement of the polishing procedure.

1. Soft, spongy tissue that bleeds with instrumentation or gentle brushing
2. Root planning or deep subgingival scaling
3. Poor plaque control by the patient
4. Herpetic lesion(s)

5. Trauma around the lip area or oral mucosa
 6. Allergies to materials used
 7. Green stain
 8. Orthodontic or fixed appliances
- C. List three reasons why it is important to inform the patient of the procedure.
1. To provide the rationale for doing the procedure
 2. To inform the patient of the sequence of polishing
 3. To address any patient concerns

4.7 Assessment of Patient

- A. Explain four procedures that should be completed prior to polishing.
1. Review and update the medical history with the patient.
 2. Assess patient's health and oral conditions.
 3. Inform the patient of the procedure and the office philosophy on coronal or selective polishing. Obtain informed consent from the patient for the procedure.
 4. Check for supragingival calculus.

4.8 Abrasion

- A. Define abrasion.
1. Abrasion: The wearing away of the tooth structure by friction.
- B. Explain the rate of abrasion.
1. The rate of abrasion is dependent upon the composition of the agent and the manner in which the agent is applied.
- C. Explain what an abrasive agent does when it is applied to the tooth.
1. The agent contains abrasive particles that have sharp edges. These particles abrade the tooth surface and produce microscopic scratches and grooves in the tooth structure.
- D. List three characteristics of abrasive particles.
1. Shape
 2. Hardness
 3. Particle size
- E. Define how the shapes of the particles affect the rate of abrasion.

1. Irregularly shaped particles with sharp edges produce deeper grooves and a faster rate of abrasion than rounded particles with dull edges.
- F. Define how hardness of an agent affects abrasive quality.
1. The particles in the agent must be harder than the tooth surface that is to be polished.
- G. Explain how the particle size (grit) of an agent affects the abrasive quality.
1. The finer the abrasive particles, the glossier the surface finish. The larger the particle size, the more abrasive and less ability to polish the surface.

4.9 Application of Abrasives

- A. Define the characteristics of an optimum abrasive agent.
1. The agent should produce a smooth tooth surface. It must not remove tooth structure, surface fluoride, or abrade the gingival tissue.
- B. List and explain three considerations when applying an abrasive to the tooth surface.
1. Quantity: The more particles applied to the tooth surface each time, the faster the rate of abrasion. Particles that are mixed with a liquid are proportional to the wetness of the paste. The dryer the mix the more heat produced.
 2. Speed of application: The faster the speed of application, the faster the rate of abrasion. When speed is increased, pressure must be reduced. Rapid abrasion increases frictional heat.
 3. Pressure of application: The heavier the pressure applied to the surface, the faster the rate of abrasion. Heavy pressure produces frictional heat.

4.10 Commonly Used Abrasive Agents in Dentistry

- A. List four considerations when choosing an abrasive.
1. Type of surface polishing
 2. Amount of stain present
 3. Moist as possible but transportable
 4. Least abrasive as possible
- B. List eight types of agents that may be used in dentistry.
1. Silix: Used for stain removal in the superfine form on tooth surfaces.
 2. Calcium carbonate (whiting, calcite, chalk): Used for various polishing procedures, mildly abrasive, and teeth whitening material.

3. Tin oxide (putty, powder, stannic oxide): Polishing agent for restorations and teeth.
4. Pumice: Flour pumice is the least abrasive form of pumice and used to remove stains from enamel only. Fine pumice is mildly abrasive and medium and coarse pumice are not for use on natural teeth.
5. Rouge (jeweler's rouge): Iron oxide is a red powder sometimes found on paper discs. Used on composite restorations and margins of porcelain and gold restorations.
6. Emery (corundum): Not to be used directly on the enamel. Aluminum oxide is the pure form of emery. Used to polish amalgam and composite restorations.
7. Diamond Particles: Polishing paste for porcelain surfaces.
8. Zirconium silicate: Found in many prophylaxis pastes, does not remove tooth structure.

4.11 Commercial Preparations for Polishing

A. List the six ingredients in commercially prepared pastes.

1. Abrasives: 50-60% of the main ingredient, i.e., pumice
2. Humectant: 20-25% retains the moisture in the product and stabilizes the ingredients, i.e., sorbitol
3. Water: 10-20%, solvent and provides desired consistency
4. Binder: 1.5-2.0% prevents separation and helps prevent splatter, i.e., agar
5. Sweetener: Artificial and noncariogenic
6. Flavoring and coloring agents

B. Explain how commercial pastes are packaged.

1. Packaged in the form of pastes, powders and tablets. Available in measured amounts in individual packets.
2. Prophylaxis paste is based on the abrasive quality. Available in various grits.

4.12 Armamentarium

A. Explain the function of the handpiece.

1. Rotary instruments are placed into the handpiece, which is a hand held instrument that requires a power source to operate.

B. State the two classifications of rotary instruments.

1. Ultra or high speed
 2. Low speed
- C. Explain the purpose of the prophylaxis angle.
1. The rubber cup or bristle brush is attached into the prophylaxis angle. Angles may be a right angle screw-on type or right angle snap-on type.
- D. List and describe the two types of prophylaxis angle attachments.
1. Rubber cups
 - i. Slip-on (snap-on)/screw-on with ribbed cup
 - ii. Slip-on (snap-on)/screw-on without ribs
 2. Bristle brushes
 - i. Slip-on or screw type
 - ii. Latch-type (mandrel mounted)
- E. State two uses for the rubber cup and brush.
1. The rubber cup is used for the removal of stains from the facial, lingual, and portions of mesial and distal tooth surfaces. A portion of the inner cup's edge is used when removing stain.
 2. A bristle brush removes stains from deep pits and grooves on the enamel surface.
- F. State two uses for dental tape or floss.
1. Polishing the interproximal surfaces
 2. Removal of particles from the interproximal areas after polishing
- G. Explain one use for finishing strips.
1. For stain removal on the proximal surfaces of anterior teeth, when removal of stain is not accomplished by other methods. Only fine or extra fine, narrow finishing strips should only be used on the enamel surfaces of teeth. Appropriate protection for soft tissue should be used.
- H. State one use for bridge threaders.
1. A flossing aid to help guide floss under bridges or around orthodontic appliances.
- I. State three uses for the mouth mirror.
1. Illumination
 2. Indirect vision
 3. Retraction of the cheek
- J. State two uses for the explorer.
1. To check the tooth surface prior to polishing

2. To differentiate between intrinsic and extrinsic stain on the tooth surface
- K. Explain the use of hydrogen peroxide for the removal of black line or green stain.
1. 3% hydrogen peroxide helps to remove black line stain. It is mixed with an equal part of water, applied with a cotton tip applicator for 30 seconds and rinsed prior to polishing.
- L. List the fifteen components of the armamentarium on the tray setup.
1. Mouth mirror
 2. Explorer
 3. Dental floss and/or tape
 4. Dappen dish for disclosing solution
 5. Gauze 2 x 2
 6. Cotton tip applicators (2)
 7. Finger cup for holding prophylaxis paste
 8. Prophylaxis paste/polishing agent
 9. Lip lubricant
 10. Disposable prophylaxis cup and brush
 11. Handpiece
 12. Saliva ejector
 13. Waste container or cup for disposal of floss, gauze, etc.
 14. Patient bib and chain
 15. Optional: Bridge threaders, abrasive polishing strips, hydrogen peroxide

4.13 Principles of Polishing

- A. State seven principles of polishing.
1. Use a modified pen grasp.
 2. Establish a fulcrum on a hard structure or tooth surface.
 3. Apply steady pressure on the rheostat for a slow, even speed (10-13psi).
 4. Use the proper strokes (pat wipe, intermittent) and correct sequence.
 5. Use correct operator and patient positioning.
 6. Use mouth mirror as needed.
 7. Maintain proper aseptic techniques and infection control.
- B. List the six final results of a coronal polish.
1. Lustrous shine

2. Enamel has high gloss which reflects light
3. All restorations and exposed tooth surfaces are glossy
4. All extrinsic stain, plaque and debris are removed
5. The mouth is free of all abrasive and polishing particles
6. There are no soft tissue lacerations

C. List the four steps to evaluate a coronal polish.

1. Apply lip lubricate
2. Apply disclosing solution with cotton swab
3. Rinse
4. Check with mouth mirror and light

D. List the fourteen criteria used to evaluate a coronal polish procedure and results.

1. Maintains aseptic technique throughout procedure.
2. Type of stains and deposits determined.
3. Appropriate polishing agent selected.
4. Positions patient for maximum comfort and accessibility.
5. Maintains good posture and operator position.
6. All aids and attachments used as designed.
7. Efficient sequence is used.
8. Uses correct grasp.
9. Maintains stable intraoral fulcrum.
10. Maintains appropriate speed.
11. Correctly adapts cup to tooth contours.
12. Removes all plaque, soft debris and extrinsic stain removed from clinical crowns.
13. Produces no tissue trauma.
14. Completes procedure in acceptable length of time.

E. Explain the difference between traditional polishing and selective polishing.

1. Traditional polishing: polishing every surface on every tooth
2. Selective polishing: polishing only two surfaces where stain or plaque is present

Clinical Education

Intended Outcome

Given the required armamentarium, didactic information, and dental unit, the student will perform the following tasks on two patients with 100% accuracy.

Adult patients must have a minimum of 24 teeth with no supragingival calculus on the teeth. Pediatric patients must have at least 2 fully erupted permanent first molars and no supragingival calculus on the teeth.

Tasks

Number of tasks to master = 48

Prepare Setup

1. Take universal precautions.
2. Assemble the coronal polishing tray setup.
 - a. Mouth mirror
 - b. Explorer
 - c. Dental floss and/or tape
 - d. Dappen dish for disclosing solution
 - e. Gauze 2 x 2
 - f. Cotton tip applicators (2)
 - g. Finger cup for holding prophylaxis paste
 - h. Prophylaxis paste/polishing agent
 - i. Lip lubricant
 - j. Disposable prophylaxis cup and brush
 - k. Handpiece with prophylaxis angle
 - l. Saliva ejector
 - m. Waste container or cup for disposal of floss, gauze, etc.
 - n. Patient bib and chain

Prepare Patient

1. Seat the patient in the chair. Place bib on the patient.

2. Review the patient's medical history. Medical history is reviewed with parent if the patient is a minor.
3. Explain the coronal polishing procedure to the patient. Informed consent is obtained.
4. Place protective eyewear on the patient.
5. Complete a cursory exam on the patient. Check the lips, oral mucosa, and the face for any lesions or trauma that would contraindicate the polishing procedure.

Procedure

1. Apply lip lubricant. Place disclosing solution in a dappen dish and dip the cotton tip applicator in the solution. Glide the tip over all the surfaces of the teeth.
2. Using the air/water syringe, place a small amount of water in the patient's mouth, and have them swish. Use the saliva ejector to remove the water. Do not have the patient close lips on saliva ejector.
3. Using a mouth mirror, direct and indirect vision, observe the areas where plaque/stains are present.
4. Fill the rubber cup with the prophylaxis paste or agent of choice and place the paste over the tooth surfaces in the quadrant.
5. Begin on the distal surface of the most posterior tooth and move toward the anterior. Begin on the maxillary or mandibular arch.
6. Using a modified pen grasp and a fulcrum, bring the cup close to the surface of the tooth.
7. Apply steady pressure with the foot to the rheostat using the toe to activate the rheostat. Adjust the speed by using lighter pressure on the rheostat. Use the slowest R.P.M., i.e., 10-13 pounds of pressure is sufficient.
8. Apply the moving cup to the tooth surface for 1 to 2 seconds. Use light pressure on the tooth to cause the cup's edges to flare slightly.
9. Begin on the gingival third of the tooth and move toward the incisal third of the tooth using a light brushing motion.
10. Turn the handpiece as required to keep the cup adapted to the tooth surface as you move toward the distal and mesial interproximal surfaces.
11. Replenish the polishing agent as needed.
12. Move the cup to the next area using a light brushing (pat wipe) motion.
13. Rinse the teeth and gingiva after completing the quadrant. Suction the mouth using the saliva ejector.

14. Complete polishing on the remaining teeth.
15. Change the prophylaxis angle and replace the rubber cup with a bristle brush.
16. Working in one quadrant at a time, place a small amount of paste on the brush and distribute over the occlusal surfaces where plaque or stain are present.
17. Retract the cheek with the mouth mirror.
18. Using a modified pen grasp, establish a fulcrum and bring the brush in close contact with the tooth surface.
19. Apply steady pressure with the foot to the rheostat, using the toe to activate the rheostat. Adjust the speed by using lighter pressure on the rheostat. Use the slowest speed R.P.M., i.e., 10-13 pounds of pressure is sufficient.
20. Apply the moving brush lightly to the occlusal surfaces for approximately 3 to 4 seconds.
21. Using a short stroke in a brushing motion, follow the inclined planes of the cusp as you polish.
22. Continue to move from tooth to tooth to prevent frictional heat.
23. Replenish polishing agent as needed.
24. Rinse the area and mouth frequently.
25. Complete all the occlusal surfaces.
26. Using the air/water syringe, place a small amount of water in the mouth and have the patient swish. Use the saliva ejector to remove the water.
27. Using waxed or unwaxed floss, floss all the interproximal surfaces. Change the floss as necessary. If necessary, use finishing strips or bridge threaders.

Evaluate

1. Apply lip lubricant. Place disclosing solution on the teeth using a new cotton tip applicator.
2. Using the air/water syringe, place a small amount of water in the patient's mouth and have the patient swish. Use the saliva ejector to remove the water.
3. Using a mouth mirror, direct and indirect vision, check for any plaque or stain using the air/water syringe. Follow the same tooth sequence as for polishing.
4. Direct the tip of the syringe toward the gingival margin of the tooth and interproximal surfaces. Move the syringe tip over the surface of the tooth using a gentle stream of air. Remain on the tooth to dry the area sufficiently. Note any area(s) of plaque or stain.
5. Remove areas of plaque or stain using the rubber cup or bristle brush.

6. Using the air/water syringe, place a small amount of water in the patient's mouth and have them swish. Use the saliva ejector to remove the water.
7. Wipe off the area around the patient's mouth and lips. Apply lip lubricant.
8. Seat the patient upright.
9. Properly dispose of any gauze, floss, or excess materials. Clean off the mouth mirror.
10. Aseptic technique is maintained throughout the entire procedure.

Evaluation and Charting

1. Date entry of procedure. All entries are made with blue or black ink or entered on a digital patient record.
- 2.) Chart the complete procedure in the patient's record, including all tooth numbers
- 3.) Student initials or signs record of services according to agency policy
- 4.) Instructor evaluates sealant and initials the record of services

Competency-Based Practice Exam

Coronal Polishing Procedure

Student Name: _____

Lab Evaluator: _____ Date: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the required armamentarium, didactic information and a dental unit, the student will perform the following tasks on two patient's dentitions with 100% accuracy in a clinical setting. The student will perform the following tasks with at least 85% accuracy on one adult patient and one pediatric patient (mixed dentition) on the final clinical examination.

Time allotment: 30 minutes for each patient

		Practice Patient 1		Practice Patient 2	
	Tasks	Pass	Fail	Pass	Fail
Prepare Setup					
1	Take universal precautions.				
2	Assemble the coronal polishing tray set up. a. Mouth mirror b. Explorer c. Dental floss and/or tape d. Dappen dish for disclosing solution e. Gauze 2 x 2 f. Cotton tip applicators (2) g. Finger cup for holding prophylaxis paste h. Prophylaxis paste/polishing agent i. Lip lubricant j. Disposable prophylaxis cup or latch-type prophylaxis cup k. Handpiece or latch-type prophylaxis angle l. Saliva ejector m. Waste container or cup for disposal of floss, gauze, etc. n. Patient bib and chain				
Prepare Patient					
1	Seat the patient in the dental chair and place patient bib.				
2	Review the patient’s medical history. If the patient is a minor, review medical history with the parent or guardian of the patient.				
3	Explain the procedure to the patient.				
4	Protective eyewear is placed on the patient.				
5	Complete a cursory exam on the patient. Check the lips, oral mucosa, and the face for any lesions or trauma that				

		Practice Patient 1		Practice Patient 2	
	Tasks	Pass	Fail	Pass	Fail
	would contraindicate the polishing procedure.				
Procedure					
1	Apply lip lubricant. Place disclosing solution in a dappen dish and dip the cotton tip applicator in the solution. Glide the tip over all the surfaces of the teeth.				
2	Using the air/water syringe, place a small amount of water in the patient's mouth and have them swish. Use the saliva ejector to remove the water.				
3	Using a mouth mirror, direct and indirect vision, observe the areas where plaque/stains are present.				
4	Fill the rubber cup with the prophylaxis paste or agent of choice, and place the paste over the tooth surfaces in the quadrant.				
5	Begin on the distal surface of the most posterior tooth and move toward the anterior. Begin on the maxillary or mandibular arch.				
6	Using a modified pen grasp and a fulcrum, bring the cup in close contact with the surface of the tooth.				
7	Apply steady pressure with the foot to the rheostat using the toe to activate the rheostat. Adjust the speed by using lighter pressure on the rheostat. Use the slowest R.P.M., i.e., 10-13 pounds of pressure is sufficient.				
8	Apply the moving cup to the tooth surface for 1 to 2 seconds. Use light pressure on the tooth to cause the cup's edges to flare slightly.				
9	Begin on the gingival third of the tooth and move toward the incisal third of the tooth using a light brushing motion.				
10	Turn the handpiece as required to keep the cup adapted to the tooth surface as you move toward the distal and mesial interproximal surfaces.				
11	Replenish the polishing agent as needed.				
12	Move the cup to the next area using a light brushing motion.				
13	Rinse the teeth and gingiva after completing the quadrant. Suction the mouth using the saliva ejector.				
14	Complete polishing on the remaining teeth.				
15	Change the prophylaxis angle and replace the rubber cup with a bristle brush.				
16	Working in one quadrant at a time, place a small amount of paste on the brush and distribute over the occlusal surfaces where plaque or stain are present.				
17	Retract the cheek with the mouth mirror.				
18	Using a modified pen grasp, establish a fulcrum and bring the brush in close contact with the tooth surface.				
19	Apply steady pressure with the foot to the rheostat, using the toe to activate the rheostat. Adjust the speed by using lighter pressure on the rheostat. Use the slowest speed R.P.M., i.e., 10-13 pounds of pressure is sufficient.				
20	Apply the moving brush lightly to the occlusal surfaces				

		Practice Patient 1		Practice Patient 2	
	Tasks	Pass	Fail	Pass	Fail
	for approximately 3 to 4 seconds.				
21	Using a short stroke in a brushing motion, follow the inclined planes of the cusp as you polish.				
22	Continue to move from tooth to tooth to prevent frictional heat.				
23	Replenish polishing agent as needed.				
24	Rinse the area and mouth frequently.				
25	Complete all the occlusal surfaces.				
26	Using the air/water syringe, place a small amount of water in the mouth and have the patient swish. Use the saliva ejector to remove the water.				
27	Using waxed or unwaxed floss, floss all the interproximal surfaces. Change the floss as necessary. If necessary, use finishing strips or bridge threaders.				
Evaluate					
1	Apply lip lubricant. Place disclosing solution on the teeth using a new cotton tip applicator.				
2	Using the air /water syringe, place a small amount of water in the patient's mouth and have the patient swish. Use the saliva ejector to remove the water.				
3	Using a mouth mirror, direct and indirect vision, check for any plaque or stain using the air/water syringe. Follow the same tooth sequence as for polishing.				
4	Direct the tip of the syringe toward the gingival margin of the tooth and interproximal surfaces. Move the syringe tip over the surface of the tooth using a gentle stream of air. Remain on the tooth to dry the area sufficiently. Note any area(s) of plaque or stain.				
5	Remove areas of plaque or stain using the rubber cup or bristle brush.				
6	Using the air/water syringe, place a small amount of water in the patient's mouth and have them swish. Use the saliva ejector to remove the water.				
7	Wipe off the area around the patient's mouth and lips. Apply lip lubricant.				
8	Seat the patient upright.				
9	Properly dispose of any gauze, floss, or excess materials. Clean off the mouth mirror.				
10	Aseptic technique is maintained throughout the entire procedure.				
Chart the Procedure					
1	The date is recorded.				
2	The entry is written in ink.				
3	Student signs record of services.				
4	Instructor initials the record of services.				
Comments:					

		Practice Patient 1		Practice Patient 2	
	Tasks	Pass	Fail	Pass	Fail

Clinical Requirements Completed

Coronal Polishing

Each student is required to complete two acceptable coronal polish patients. This is to be supervised by a dentist or hygienist. Consent/permission slips required.

	Dentist/Hygienist Signature	Date
1.		
2.		

CLINIC REQUIREMENT

FORMS TO BE SUBMITTED TO CLINICAL EXAMINER AT FINAL EXAMINATION

Competency-Based Clinical Final Evaluation

Performing a Coronal Polish - Product

Student Name: _____

Evaluator: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary personnel, supplies, and equipment to perform a coronal polish, the student will perform the following tasks on one adult patient and one pediatric patient with 85% accuracy on the final examination (28 points out of 34).

Time allotment: 30 minutes for each patient

Grading Criteria			
	2 = Acceptable	1= Improvable	0 = Unacceptable
1	Maintains aseptic technique with universal precautions.		
2	Armamentarium is complete.		
3	Types of stains and deposits determined and appropriate polishing agents determined.		
4	Positions patient for maximum comfort/accessibility.		
5	Maintains good posture with face about 14-16 inches from patient.		
6	All attachments are used as designed.		
7	Efficient sequence is used.		
8	Uses correct grasp.		
9	Maintains stable intraoral fulcrum.		
10	Maintains appropriate speed.		
11	Correctly adapts cup to tooth contours (gingival and interproximal).		
12	Removes all plaque, soft debris and extrinsic stain from all clinical crowns. This step is required to pass procedure.		
13	Produces no tissue trauma.		
14	Complete chart entry.		
Total			
Comments:			

SECTION 5.0 Temporary Crown Restorations

Didactic Education

Intended Outcome

Given information about the types, materials, uses and techniques of temporary crowns restorations, the student must demonstrate at least 80% accuracy on the didactic examination.

Tasks

Number of tasks to master = 116

5.01 Types, Materials, Uses, and Techniques of Temporary Crowns

- A. Explain eight reasons why temporary crowns are placed.
 - 1. To prevent sensitivity in the prepared tooth
 - 2. To protect the dentin from oral fluids
 - 3. To maintain occlusion
 - 4. To prevent fracturing of the finish line or breakdown of the prepared tooth
 - 5. To prevent changes in gingival tissue caused by infringement of the crown margin or by food impaction
 - 6. To provide for lost function
 - 7. To maintain aesthetics
 - 8. To restore or improve the contour of the original tooth
- B. List three types of temporary crowns.
 - 1. Anatomical metal crowns
 - i. Stainless steel
 - ii. Aluminum
 - 2. Preformed plastic crown
 - i. Polycarbonate
 - ii. Cellulose
 - 3. Custom resin crown
- C. List two advantages of the anatomical metal temporary crowns.
 - 1. Malleability
 - 2. Low cost
- D. List two disadvantages of the anatomical metal temporary crowns.
 - 1. Aesthetic appearance restricts use mostly to posterior teeth

2. Softness
- E. List four advantages of the preformed plastic temporary crowns.
 1. Aesthetically pleasing to the patient
 2. Easy adaptation for acceptable fit
 3. Some options for tooth shade
 4. Variety of choices of sizes and shapes
- F. List two disadvantages of the preformed plastic temporary crowns.
 1. May cause slight open contact
 2. Limited shades
- G. List four advantages of the custom resin temporary crowns.
 1. Superior fit compared to other temporary crowns
 2. Aesthetically pleasing
 3. Can be made to fit any tooth in the mouth
 4. Can easily add acrylic to adapt fit to prep
- H. List two disadvantages of the custom resin temporary crowns.
 1. Takes longer time to produce
 2. Initially more difficult to produce
- I. Identify four types of finish/margin lines.
 1. Bevel ledge or slant
 2. Chamfer or slope
 3. Feather or knife edge
 4. Shoulder or ledge
- J. List five negative properties of acrylic resins.
 1. Toxic to breathe, use in ventilated area.
 2. Monomer is irritating to soft tissue-avoid skin contact.
 3. Monomer is toxic to prepared tooth, mix all powder into liquid.
 4. Exothermic reaction during cure may cause sensitivity to tooth and tissue.
 5. Shrink during cure.
- K. List five types of resin materials.
 1. Methyl methacrylate
 2. Light-cure resin
 3. Ethyl/ vinyl methacrylate
 4. Epimine

5. Composite

L. Define centric, infra-occlusion, and supra-occlusion.

1. Centric occlusion: The static position of the bite during contact of the maxillary and mandibular arches.
2. Infra-occlusion: The appearance of occlusal markings on only the adjacent teeth, not on the crown.
3. Supra-occlusion: The appearance of occlusal markings on the crown only.

M. Describe temporary cement.

1. Dental material used to hold temporary restorations in place, to seal and fill margin, and fill empty spaces to support occlusion.

N. Discuss nine criteria for placing a temporary crown.

1. The crown margin allowance of 0.5mm short on preformed aluminum, preformed and custom acrylic must meet 95% of finish line and be no more than .5mm short.
2. The cervical margin is smooth.
3. The cervical margin fits snug against to tooth.
4. Facial contour is similar to the natural tooth.
5. Lingual contour is similar to the natural tooth.
6. Occlusal anatomy is similar to natural tooth.
7. Occlusal plane is accurate (minimum of one centric mark out of four).
8. Interproximal contacts (Floss meets with some resistance).
9. Crown surfaces are smooth surfaces.

O. List the steps for cementation of a temporary crown.

1. Rinse, isolate, and dry prep.
2. Coat exterior of crown with lubricant. Do not allow lubricant to contact interior of crown or prepped tooth.
3. Mix cement according to manufactures directions.
4. Coat inside of preformed and custom acrylic crowns with a thin layer of cement and fill 1/3 to 1/2 full for aluminum.
5. Seat crown and check margins with explorer.
6. Have patient bite on cotton roll.
7. Remove cement with instrument and knotted floss when set.

P. Discuss six additional techniques for fabricating custom temporary crowns.

1. Wax molding technique: Instead of taking an alginate impression, the operator may use pink baseplate wax for taking the impression.
2. Silicone putty impression technique: Silicone is more expensive than alginate, but maintains dimensional stability.
3. Intraoral molding “blob” technique: The acrylic resin itself is used to fabricate the temporary crown without any preliminary impression prior to tooth preparation.
4. Vacuum-formed plastic resin tray: A plastic matrix heated to the shape of the arch using a vacuum forming system and study model.
5. Relining aluminum shell crowns: Aluminum shell crowns may not have adequate retention or marginal adaptation. It is possible to reline the shell with acrylic resin to make it last longer and fit better.
6. Temp tabs: A small disc of plastic used to make a matrix of the unprepared tooth. Although they are somewhat expensive, they are simple to use and can be reused as needed.

Q. Discuss the importance of using aseptic techniques when fabricating temporary crowns in the lab or on a patient.

1. To prevent cross-contamination during fabrication of temporary crown.
2. Utilize universal precautions to protect operator and patients (i.e. PPE).

5.02 Temporary Crown Procedures

A. List the procedure for placing a preformed aluminum temporary crown.

1. Check occlusion.
2. Visually and tactually locate the margin line.
3. Measure the mesiodistal space at the contact area.
4. Select the appropriate aluminum temporary crown (should be slightly large).
5. Try-in the crown.
6. Check the mesiodistal space.
7. Check the occlusal, facial, and lingual contours.
8. Scribe a trim line for trimming the finish line and trim the crown to fit the preparation. If margin is trimmed short, select another crown.
9. Reduce the circumference of the crown margin by crimping and contouring, then smooth the edges of the crown.

10. Check marginal adaptation of temporary crown with an explorer from the gingival to the occlusal surface.
11. Develop and check the occlusion and check the interproximal contacts.
12. Use a ball burnisher to increase the size if needed to accomplish contact.
13. Smooth the crown.
14. Cement the temporary crown.
15. Remove excess cement around the crown margin and excess cement on the interproximal with knotted floss (removing horizontally).
16. Make final check for occlusion.

B. List the procedure for placing a preformed plastic temporary crown.

1. Check the occlusion.
2. Visually and tactually locate the margin line on prep.
3. Measure the mesiodistal space at the contact area.
4. Select the appropriate preformed plastic crown.
5. Try-in the crown.
6. Adjust the binding with a round carbide lab bur if needed.
7. Adjust the gingival length of the margin and contour of the crown with an acrylic bur.
8. Lubricate the prep.
9. Mix the polymer and monomer.
10. Fill the crown with the acrylic resin.
11. Seat the filled crown on the preparation when the material has lost its sheen and is of doughy consistency.
12. Remove crown and trim excess resin with scissors and reseat crown during polymerization process.
13. Trim the crown margin with acrylic bur.
14. Adjust facial and lingual contours and adjust occlusion/incisal length.
15. Refine contours and interproximal areas.
16. Adjust the contacts and check with floss.
17. Refine and polish the crown surfaces.
18. Final check of marginal fit, interproximal contacts and occlusion.
19. Lubricate the crown.
20. Cement the crown on the preparation.

21. Remove excess cement around the crown margin and excess cement on the interproximal with knotted floss (removing horizontally).
 22. Final check of occlusion.
- C. List the procedure for placing a custom resin temporary crown.
1. Check the occlusion.
 2. Take an impression of the unprepared tooth.
 3. Place prepared tooth in the typodont.
 4. Reseat impression to check placement.
 5. Visually and tactually locate the margin line on the prep.
 6. Mix resin (if using methyl methacrylate mix thoroughly), the monomer (liquid) in its pure form is toxic to the tooth.
 7. Lubricate the prepared tooth.
 8. Place resin mixture in impression and place on typodont with prepared tooth when acrylic has lost its sheen and is doughy.
 9. Wait 3 to 5 minutes.
 10. Remove resin crown from impression and examine, then remove marginal excess from crown with scissors.
 11. Reseat until hardened (Some types do not require this).
 12. Check the contacts with floss, check the marginal adaptation and contours of the crown.
 13. Check occlusion.
 14. Adjust as needed with acrylic bur.
 15. Smooth and polish the crown.
 16. Cement the crown.
 17. Remove excess cement around the crown margin and excess cement at the interproximal with knotted floss (removing horizontally).
 18. Final check of occlusion.

*In a clinical situation a complete chart entry would be required.

Clinical Education

Placing Preformed Aluminum Temporary Crowns Procedure

Intended Outcome

Given the necessary personnel, supplies, and equipment to fabricate preformed aluminum temporary crowns, the student will perform the following tasks on two typodont teeth with 100% accuracy. The student will perform the following tasks on a typodont tooth with at least 85% accuracy on the final laboratory examination.

Time allotment: 45 minutes

Tasks

Number of tasks to master = 19

Preliminary Procedures

1. Take universal precautions.
2. Assemble the preformed aluminum temporary crown tray set up. In an actual office practice you may find some of the items are not used.
 - a. Typodont with prepared tooth
 - b. Mouth mirror
 - c. Explorer
 - d. Articulating paper and holder
 - e. Assortment of aluminum crowns
 - f. Curved crown and bridge scissors
 - g. Contouring pliers
 - h. Dental floss
 - i. Burnisher
 - j. Cotton rolls
 - k. Lubricant
 - l. Polishing devices
 - m. Temporary cement
 - n. Mixing pad and spatula

Crown Procedure

1. Check occlusion.
2. Visually and tactually locate the margin line.
3. Measure the mesiodistal space at the contact area.
4. Select the appropriate aluminum temporary crown (should be slightly large).
5. Try-in the crown.
6. Check the mesiodistal space.
7. Check the occlusal, facial and lingual contours.
8. Scribe a trim line for trimming the finish line and trim the crown to fit the preparation. If margin is trimmed short, select another crown.
9. Reduce the circumference of the crown margin by crimping and contouring, then smooth the edges of the crown.
10. Check marginal adaptation of temporary crown with an explorer from the gingival to the occlusal surface.
11. Develop and check the occlusion and check the interproximal contacts.
12. Use a ball burnisher to increase the size if needed to accomplish contact.
13. Smooth the crown.
14. Cement the temporary crown.
15. Remove excess cement around the crown margin and excess cement interproximally with knotted floss (removing horizontally).
16. Make final check for occlusion.
17. Instructor evaluates crown.

Clinical Education

Placing a Preformed Plastic Temporary Crown Procedure

Intended Outcome

Given the necessary personnel, supplies, and equipment to fabricate a preformed plastic temporary crown, the student will perform the following tasks on two anterior typodont teeth with 100% accuracy. The student will perform the following tasks on a typodont tooth with at least 85% accuracy on the final laboratory examination.

Time allotment: 45 minutes

Tasks

Number of tasks to master = 25

Preliminary Procedures

1. Take universal precautions.
2. Assemble the preformed plastic temporary crown tray set up. In an actual office practice you may find some of the items are not used.
 - a. Typodont with prepared tooth
 - b. Mouth mirror
 - c. Explorer
 - d. Excavator
 - e. Articulating paper and holder
 - f. Assortment of preformed polycarbonate temporary crowns
 - g. Acrylic/carbide burs
 - h. Sharpened soft lead pencil
 - i. Curved crown and bridge scissors
 - j. Cotton rolls
 - k. Lubricant
 - l. Dappen dish
 - m. Acrylic resin kit
 - n. 2 x 2 gauze
 - o. Mixing spatula

- p. Polishing devices
- q. Temporary cement
- r. Mixing pad
- s. Dental floss
- t. Boley gauge

Crown Procedure

1. Check the occlusion.
2. Visually and tactually locate the margin line on prep.
3. Measure the mesiodistal space at the contact area.
4. Select the appropriate preformed plastic crown.
5. Try-in the crown.
6. Adjust the binding with a round carbide lab bur if needed.
7. Adjust the gingival length of the margin and contour of the crown with an acrylic bur.
8. Lubricate the prep.
9. Mix the polymer and monomer.
10. Fill the crown with the acrylic resin.
11. Seat the filled crown on the preparation when the material has lost its sheen and is of doughy consistency.
12. Remove crown and trim excess resin with scissors and reseal crown during polymerization process.
13. Trim the crown margin with acrylic bur.
14. Adjust facial and lingual contours and adjust occlusion/incisal length.
15. Refine contours and interproximal areas.
16. Adjust the contacts and check with floss.
17. Refine and polish the crown surfaces.
18. Final check of marginal fit, interproximal contacts and occlusion.
19. Lubricate the crown.
20. Cement the crown on the preparation.
21. Remove excess cement around the crown margin and excess cement interproximally with knotted floss (removing horizontally).
22. Final check of occlusion.
23. Instructor evaluates crown.

Clinical Education

Placing a Custom Resin Temporary Crown Procedure

Intended Outcome

Given the necessary personnel, supplies, and equipment to fabricate a custom resin temporary crown, the student will perform the following tasks on one posterior and one anterior typodont tooth with 100% accuracy. The student will perform the following tasks on a typodont tooth with at least 85% accuracy on the final laboratory examination.

Time allotment: 45 minutes

Tasks

Preliminary Procedures

1. Take universal precautions.
2. Assemble the custom resin temporary crown tray setup. In an actual office practice you may find some of the items are not used.
 - a. Typodont with prepared tooth
 - b. Mouth mirror
 - c. Explorer
 - d. Articulating paper and holder
 - e. Assortment of quadrant impression trays
 - f. Impression material setup
 - g. Mixing impression material armamentarium
 - h. Acrylic resin kit
 - i. Dappen dish
 - j. Curved crown and bridge scissors
 - k. Spoon excavator
 - l. Assortment of acrylic burs
 - m. Polishing devices
 - n. Lubricant
 - o. Dental floss
 - p. Cotton rolls

- q. 2 x 2 gauze
- r. Temporary cement kit
- s. Mixing pad
- t. Lathe (optional)
- u. Rag wheel (optional)

Crown Procedure

1. Check the occlusion.
2. Take an impression of the unprepared tooth.
3. Place prepared tooth in the typodont.
4. Reseat impression to check placement.
5. Visually and tactually locate the margin line on the prep.
6. Mix resin, if using methyl methacrylate, mix thoroughly as the monomer (liquid) in its pure form is toxic to the tooth.
7. Lubricate the prepared tooth.
8. Place resin mixture in impression and place on typodont with prepared tooth when acrylic has lost its sheen and is doughy.
9. Wait 3 to 5 minutes.
10. Remove resin crown from impression and examine, then remove marginal excess from crown with scissors.
11. Reseat until hardened (some types do not require this).
12. Check the contacts with floss, check the marginal adaptation and contours of the crown.
13. Check occlusion.
14. Adjust as needed with acrylic bur.
15. Smooth and polish the crown.
16. Cement the crown.
17. Remove excess cement around the crown margin and excess cement on the interproximal with knotted floss (removing horizontally).
18. Final check of occlusion.
19. Instructor evaluates crown

Competency-Based Practice Evaluation

Placing Preformed Aluminum Temporary Crowns Procedure

Student Name: _____

Lab Evaluator: _____ Date: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary personnel, supplies, and equipment to fabricate a preformed aluminum temporary crown, the student will perform the following tasks on two typodont teeth with 100% accuracy in a laboratory setting. The student will perform the following tasks on a typodont tooth with at least 85% accuracy on the final laboratory examination.

Time allotment: 45 minutes

		Practice Crown 1		Practice Crown 2	
	Tasks	Pass	Fail	Pass	Fail
Preliminary Procedure					
1	Take universal precautions.				
2	Assemble the preformed aluminum temporary crown tray set up. In an actual office practice you may find some of these items are not used. <ul style="list-style-type: none"> a. Typodont with prepared tooth b. Mouth mirror c. Explorer d. Articulating paper and holder e. Assortment of aluminum crowns f. Curved crown and bridge scissors g. Contouring pliers h. Dental floss i. Burnisher j. Cotton rolls k. Lubricant l. Polishing devices m. Temporary cement n. Mixing pad and spatula 				
Crown Procedure					
1	Check occlusion.				
2	Visually and tactually locate the margin line.				
3	Measure the mesiodistal space.				
4	Select the appropriate aluminum temporary crown.				
5	Try-in the crown.				
6	Check the mesiodistal space.				
7	Check the facial and lingual contours.				
8	Scribe a trim line for trimming the finish line and trim/contour the crown to fit the preparation. If the				

		Practice Crown 1		Practice Crown 2	
	Tasks	Pass	Fail	Pass	Fail
	margin is trimmed short, select another crown.				
9	Reduce the circumference of the crown margin by crimping and contouring, and smooth the edges of the crown.				
10	Check marginal adaptation of temporary crown with an explorer from the gingival to the occlusal surface.				
11	Check the occlusion and interproximal contacts.				
12	Use a ball burnisher to increase the size to accomplish the contact.				
13	Smooth the crown.				
14	Cement the temporary crown.				
15	Remove excess cement with floss, removing floss horizontally.				
16	Make final check for occlusion.				
17	Instructor evaluates the crown.				
Comments:					

Competency-Based Practice Evaluation

Placing Preformed Plastic Temporary Crowns Procedure

Student Name: _____

Lab Evaluator: _____ Date: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary personnel, supplies, and equipment to fabricate a preformed plastic temporary crown, the student will perform the following tasks on two anterior typodont teeth with 100% accuracy in a laboratory setting. The student will perform the following tasks on one anterior typodont tooth with at least 85% accuracy on the final laboratory examination.

Time allotment: 45 minutes

		Practice Crown 1		Practice Crown 2	
	Tasks	Pass	Fail	Pass	Fail
Preliminary Procedure					
1	Take universal precautions.				
2	Assemble the preformed plastic temporary crown tray setup. In an actual office practice you may find some of these items are not used. a. Typodont with prepared tooth b. Mouth mirror c. Explorer d. Excavator e. Articulating paper and holder f. Assortment of preformed polycarbonate temporary crowns g. Acrylic/carbide burs h. Sharpened soft lead pencil i. Curved crown and bridge scissors j. Cotton rolls k. Lubricant l. Dappen dish m. Acrylic resin kit n. 2 x 2 gauze o. Mixing spatula p. Polishing devices q. Temporary cement r. Mixing pad s. Dental floss t. Boley gauge				
Crown Procedure					
1	Check occlusion.				
2	Visually and tactually locate the margin line.				

		Practice Crown 1		Practice Crown 2	
	Tasks	Pass	Fail	Pass	Fail
3	Measure the mesiodistal space at the contact area.				
4	Select the appropriate preformed plastic crown.				
5	Try-in the crown.				
6	Adjust the binding with a round carbide bur if needed.				
7	Adjust the gingival length of the margin and contour of the crown with an acrylic bur.				
8	Lubricate the prep.				
9	Mix the polymer and monomer creating an exothermic reaction.				
10	Fill the crown with the acrylic resin.				
11	Seat the filled crown on the preparation when the material has lost its sheen and is of doughy consistency.				
12	Remove the crown and trim excess resin with scissors and reseat crown during polymerization process.				
13	Trim the crown margin with acrylic bur.				
14	Adjust facial and lingual contours and adjust occlusion/incisal length.				
15	Refine contours and interproximal areas.				
16	Adjust the contacts and check with floss.				
17	Refine and polish the crown surfaces.				
18	Final check of marginal fit, interproximal contacts, and occlusion.				
19	Lubricate the crown.				
20	Cement the crown on the preparation.				
21	Remove excess cement around the crown margin and excess cement interproximally with floss (removing vertically).				
22	Final check of occlusion.				
23	Instructor evaluates the crown.				
Comments:					

Competency-Based Practice Evaluation

Placing a Custom Resin Temporary Crowns Procedure

Student Name: _____

Lab Evaluator: _____ Date: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary personnel, supplies, and equipment to fabricate a custom resin temporary crown, the student will perform the following tasks on one posterior and one anterior typodont tooth with 100% accuracy in a laboratory setting. The student will perform the following tasks on one anterior typodont tooth with at least 85% accuracy on the final laboratory examination.

Time allotment: 45 minutes

		Practice Crown 1		Practice Crown 2	
	Tasks	Pass	Fail	Pass	Fail
Preliminary Procedure					
1	Take universal precautions.				
2	Assemble the custom resin temporary crown tray set up. In an actual office practice you may find some of these items are not used. a. Typodont with prepared tooth b. Mouth mirror c. Explorer d. Articulating paper and holder e. Assortment of quadrant impression trays f. Impression material setup g. Mixing impression material armamentarium h. Acrylic resin kit i. Dappen dish j. Curved crown and bridge scissors k. Spoon excavator l. Assortment of acrylic burs m. Polishing devices n. Lubricant o. Dental floss p. Cotton rolls q. 2 x 2 gauze r. Temporary cement kit s. Mixing pad t. Lathe (optional) u. Rag wheel (optional)				
Crown Procedure					
1	Check the occlusion.				
2	Take an impression of the unprepared tooth.				

		Practice Crown 1		Practice Crown 2	
	Tasks	Pass	Fail	Pass	Fail
3	Place prepared tooth in the typodont.				
4	Reseat impression to check placement.				
5	Visually and tactually locate the margin line of the prep.				
6	Mix resin (if using methyl methacrylate) mix thoroughly, the monomer (liquid) in its pure form is toxic to the tooth.				
7	Lubricate the tooth.				
8	Place resin mixture in impression and place on typodont with prepared tooth when acrylic has lost its sheen and is doughy.				
9	Wait 3 to 5 minutes.				
10	Remove resin crown from impression, examine and remove marginal excess with scissors.				
11	Reseat as per manufacturer directions.				
12	Check the contacts with floss, check the marginal adaptation and contours of the crown.				
13	Check occlusion.				
14	Adjust as needed with acrylic bur.				
15	Smooth and polish crown.				
16	Cement crown.				
17	Remove excess cement around the crown margin and excess cement interproximally with floss (removing vertically).				
18	Final check occlusion.				
19	Instructor evaluates crown.				
Comments:					

Clinical Requirements Completed

Temporary Crown Restoration

Each student is required to complete two of each of preformed aluminum, custom acrylic, and preformed polycarbonate crowns. To be done on a typodont.

	Dentist Signature	Date
	Aluminum	
1.		
2.		
	Custom Acrylic	
1.		
2.		
	Preformed Polycarbonate	
1.		
2.		

CLINIC REQUIREMENT

FORMS TO BE SUBMITTED TO CLINICAL EXAMINER AT FINAL EXAMINATION

Competency-Based Clinical Final Evaluation

Placing Preformed Aluminum Temporary Crowns – Product

Student Name: _____

Evaluator: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary personnel, supplies, and equipment to fabricate a preformed aluminum temporary crown, the student will perform the followings tasks on one molar typodont tooth with 85% accuracy on the final examination (17 points out of 20).

Time allotment: 45 minutes

Grading Criteria				
	2 = Acceptable	2 = Improvable	0 = Unacceptable	0-2
1	Crown contacts with the adjacent teeth			
	a. Mesial			
	b. Distal			
2	Contours are in the same plane as adjacent teeth			
	a. Facial			
	b. Lingual			
	c. Occlusal			
3	Crown margins are no more than .05mm short of the preparation line			
4	Buccal			
5	Lingual			
6	Interproximal			
7	Crown fits snugly against the finish line			
8	At least one centric occlusal mark is consistent with adjacent teeth			
9	Crown surfaces are smooth			
Total				
Comments:				

Competency-Based Clinical Final Evaluation

Placing Preformed Plastic Temporary Crowns – Product

Student Name: _____

Evaluator: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary personnel, supplies, and equipment to fabricate a preformed plastic temporary crown, the student will perform the followings tasks on one tyodont anterior tooth with 85% accuracy on the final examination (17 points out of 20).

Time allotment: 45 minutes

Grading Criteria				
	2 = Acceptable	1 Improvable	0 = Unacceptable	0-2
1.0	Crown contacts with the adjacent teeth			
	a. Mesial			
	b. Distal			
2.0	Contours are in the same plane as adjacent teeth			
	a. Facial			
	b. Lingual			
	c. Occlusal			
3.0	95% of the crown margins meet the preparation line and no more than 0.5mm short			
4.0	Buccal			
5.0	Lingual			
6.0	Interproximal			
7.0	Crown finish line is tapered			
8.0	At least one centric occlusal mark is consistent with adjacent teeth			
9.0	Crown surfaces are smooth			
Total				
Comments:				

Competency-Based Clinical Final Evaluation

Placing a Custom Resin Temporary Crowns – Product

Student Name: _____

Evaluator: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary personnel, supplies, and equipment to fabricate a custom resin temporary crown, the student will perform the following tasks on one anterior tyodont tooth with 85% accuracy on the final examination (19 points out of 22).

Time allotment: 45 minutes

Grading Criteria			
	2 = Acceptable	1 = Improvable	0 = Unacceptable
1	Crown contacts with the adjacent teeth		0-2
	Mesial		
	Distal		
2	Contours are in the same plane as adjacent teeth		
	Facial		
	Lingual		
	Occlusal/incisal		
3	95% of the crown margins meet the preparation line and no more than 0.5mm short		
4	Buccal		
5	Lingual		
6	Interproximal		
7	Crown finish line is tapered		
8	At least one centric occlusal mark is consistent with adjacent teeth		
9	Crown surfaces are smooth		
Total			
Comments:			

SECTION 6.0 Use of a High Speed Handpiece to Remove Orthodontic Cement or Resin

Didactic Education

Intended Outcome

Given information about the laws and rules of the Idaho State Board of Dentistry, abrasion and use of abrasives, patient and operating positioning, use and cautions of the high speed handpiece, and procedure for use of the high speed handpiece the student must demonstrate at least 80% accuracy on the didactic examination.

Tasks

Number of tasks to master = 76

6.01 Laws and Rules of the Idaho State Board of Dentistry

A. Define the meaning of dental assistant from the Idaho Code Statute.

1. dental assistant: A person who need not be licensed/regulated under this chapter, but who is regularly employed by a dentist at their office, who works under the dentist's direct supervision, and is adequately trained and qualified according to standards established by the board of dentistry to perform the dental services permitted to be performed by assistants by this chapter and applicable rules of the board.

B. Explain the role of the State Board of Dentistry.

1. To assure the public health, safety, and welfare in the state of Idaho by the licensure and regulation of dentists and dental hygienists.

C. Define the Administrative rule 35. 01. f. and g.vi.

1. Prohibited Duties: Subject to other applicable provisions of these rules and of the Act, dental assistants are hereby prohibited from performing any of the activities specified below:
 - i. Any intra-oral procedure using a high speed handpiece, except to the extent authorized by a Certificate of Registration or certificate or diploma of course completion issued by an approved entity.
 - ii. The following expanded functions, unless authorized by a Certificate of Registration or certificate or diploma of course completion issued by an approved teaching entity and performed under direct supervision.

- iii. Use of a high speed handpiece restricted to the removal of orthodontic cement or resin.

6.02 Review Tooth Anatomy

A. Identify the following tooth anatomy terms.

1. Enamel
2. Dentin
3. Pulp
4. Root
5. Cementum
6. Cementoenamel Junction (CEJ)
7. Periodontal ligament
8. Gingiva

6.03 Abrasion

A. Define abrasion.

1. Abrasion: The wearing away of the tooth structure by friction.

B. Explain the rate of abrasion.

1. The rate of abrasion is dependent upon the composition of the agent and the manner in which the agent is applied.

6.04 Abrasives and Finishing Burs

A. Define the characteristics of an optimum abrasive agent.

1. The agent should produce a smooth tooth surface. It must not remove tooth structure, surface fluoride, or abrade the gingival tissue.

B. List and explain three considerations when using an abrasive on a tooth.

1. Quantity: The more particles applied to the tooth surface each time, the faster the rate of abrasion. Particles that are mixed with a liquid are proportional to the wetness of the paste. The dryer the mix the more heat produced.
2. Speed of application: The faster the speed of application, the faster the rate of abrasion. When speed is increased, pressure must be reduced. Rapid abrasion increases frictional heat.
3. Pressure of application: The heavier the pressure applied to the surface the faster the rate of abrasion. Heavy pressure produces frictional heat.

6.05 Precautions for Use of the High Speed Handpiece

A. List two reasons to reduce frictional heat.

1. Thermal damage to the pulp
2. Pain to the patient

B. List and explain four precautions that must be taken during the removal procedure.

1. Maintain functional anatomy by using the instruments in the correct manner.
 - i. Start all rotary instruments prior to touching the restoration.
 - ii. Keep instruments moving over the surface.
 - iii. Use light, sweeping strokes to minimize friction.
 - iv. Use each instrument only on the surfaces for which it was designed.
 - v. Do not use at an acute angle, keep parallel to tooth.
 - vi. Keep area fully illuminated.
2. Prevent damage to the patient's soft tissue.
 - i. Retract the tongue, cheeks, and lips during the procedure.
 - ii. Position instruments correctly so they will not abrade the soft tissue, especially discs and strips.
 - iii. Use a secure grasp and stable fulcrum with each instrument.
 - iv. Rinse all abrasive materials from the mouth after polishing.
3. Protect the patient from polishing debris.
 - i. Remove excess abrasive material from the mouth as quickly as possible.
 - ii. Provide eye protection for the patient.
 - iii. Do not carry instruments or abrasive materials over the patient's face.
4. Protect the pulp of the tooth from excess heat.
 - i. Use air or water cooling streams whenever possible.
 - ii. Use intermittent contact of the rotary instruments to the tooth surface.
 - iii. Run rotary instruments at the most minimum speed that will still be effective.

C. List four types of teeth that require special attention.

1. Hypo-calcified
2. Hypo-fluorosed
3. Decalcified
4. Soft enamel

6.06 Patient and Operator Positioning

A. List five aspects of proper patient positioning.

1. Use proper draping and protective eyewear.
2. Patient's head is level with the lower half or the operator's upper arm.
3. The mouth should be fully illuminated.
4. For mandibular teeth, the occlusal plane is parallel to the floor.
5. For maxillary teeth the occlusal plane is at a 90° angle to the floor.

B. List four aspects of proper operator positioning.

1. Wear PPE.
2. The back is straight and shoulders are square.
3. Visual range is 10-14 inches without bending neck.
4. Feet are flat on the floor and thigh are parallel to floor.

6.07 Use of the High Speed Handpiece and Abrasive Instruments

A. List three types of abrasive/finishing instrument used in resin removal.

1. Finishing burs: These burs have 12 or 32 blades.
2. Diamond burs: These are impregnated with small diamond particles.
3. Rotary discs/wheels/points: These discs range from coarse to very fine and come in a variety of abrasives that vary in hardness.

B. List six principles used with the high speed handpiece.

1. Use a modified pen grasp.
2. Establish a fulcrum on a hard structure or tooth surface.
3. Apply steady pressure on the rheostat for a slow, even speed.
4. Use the proper stroke (light continuous sweeping).
5. Use correct operator and patient positioning.
6. Use mouth mirror as needed.

C. List seven principles for use of the high speed handpiece and abrasive instruments during cement removal.

1. Use a light sweeping touch.
2. Keep bur parallel to tooth surface.
3. Do not use the tip of the bur.
4. Keep speed as low as possible.
5. Avoid abrading heights of contour.

6. Do not contact soft tissue.
7. Final result must be checked by dentist.

6.08 Procedure for Removing Orthodontic Adhesives with a High Speed Handpiece

A. List the steps in removing orthodontic cement or resin on mounted extracted teeth or dentoform.

1. Place PPE.
2. Select abrasive device.
3. Complete initial or gross removal of adhesive.
4. Select polishing device.
5. Complete final removal of adhesive.
6. Check surface with explorer.
7. Have dentist evaluate.

B. List the steps in gross removal of orthodontic cement or resin in the clinical setting.

1. Cement removal observed by dentist.
2. Seat and drape patient, place protective eyewear.
3. Place assistant PPE.
4. Select abrasive device.
5. Complete initial or gross removal of composite only under direct supervision by dentist.
6. Final cement removal completed by dentist.
7. Complete chart entry.

C. List the steps in complete removal of orthodontic cement or resin in the clinical setting.

1. Cement removal observed by dentist.
2. Seat and drape patient, place protective eyewear.
3. Place assistant PPE.
4. Select abrasive device.
5. Complete initial or gross removal of cement.
6. Select final abrasive device.
7. Complete final cement removal.
8. Final check by dentist.
9. Complete chart entry.

Clinical Education

6.01 Removing Orthodontic Cements or Resins on a Dentoform or Extracted Teeth

Intended Outcome

Given the necessary supplies and equipment for removing orthodontic resin cements with a high speed handpiece, the student will perform the following tasks with 100% accuracy. The student will perform to 85% accuracy on the final evaluation. The procedures for removal of orthodontic cements can only be done in an office under direct supervision of a dentist.

Tasks

Number of tasks to master = 17

Setup and Preparation

1. Take universal precautions.
2. Assemble the tray setup. In an actual office you may find some of these items are not used.
 - a. Mouth mirror
 - b. Explorer
 - c. Cotton pliers
 - d. High-speed handpiece
 - e. Cotton rolls or other isolation materials
 - f. High volume evacuator/saliva ejector
 - g. 3-way syringe tip
 - h. Appropriate finishing bur
 - i. Abrasive rotary discs, cups, points
3. Place PPE.
4. Select abrasive device for gross removal of cement and place in handpiece.
5. Position patient (dentoform or mounted teeth) and operator. Refer to the previous sections for correct positioning. A systematic sequence should be used to ensure cement is removed from all teeth.
6. Using a modified pen grasp and a stable fulcrum, bring the device close to the surface of the tooth.

7. Apply steady pressure to the foot control to activate the handpiece.
8. Keeping the abrasive device parallel to the tooth surface, remove cement with a sweeping back and forth movement. Use a light touch.
9. Complete initial or gross removal watching for color and texture changes indicating approach to enamel. Adhesive looks dull and feels rough when explored with an instrument. The adhesive will also be a different color than enamel.
10. Do not remove to the level of the enamel. Rinse and /or suction area as needed.
11. Select appropriate adhesive devise (abrasive impregnated rubber point, non-crosscut finishing bur, or other conservative abrasive device) and place in the handpiece.
12. Using a modified pen grasp and a stable fulcrum, bring the device close to the surface of the tooth.
13. Apply steady pressure to the foot control to activate the handpiece. Run at near stall speed.
14. Keeping the abrasive device parallel to the tooth surface remove cement with a sweeping movement. Use a light touch.
15. Complete final removal of the adhesive. Rinse and suction area as needed.
16. Check tooth with explorer mirror and illumination. Using illumination, a mouth mirror, and a hand instrument (i.e., explorer or scaler) look for markings, scrapes, and dull surfaces on tooth. Check all surfaces including the interproximal.
17. Have dentist evaluate procedure.

6.02 Gross Removal of Orthodontic Cements or Resin on a Patient

After the assistant has shown proficiency in removal of orthodontic cements in a laboratory setting, gross removal of cement or adhesive on a patient can be attempted under the direct supervision of the orthodontist. One tooth per quadrant should be mastered first followed by mastery of a quadrant. Final removal is completed by the dentist.

Intended Outcome

Given the necessary supplies and equipment for removing orthodontic resin cements with a high speed handpiece, the student will perform the following tasks with 100% accuracy. The student will perform to 85% accuracy on the final evaluation of the procedures. Removal of orthodontic cements can only be done in an office under direct supervision of a dentist.

Tasks

Number of tasks to master = 14

1. Take universal precautions.
2. Assemble the tray setup. In an actual office you may find some of these items are not used.
 - a. Mouth mirror
 - b. Explorer
 - c. Cotton pliers
 - d. High-speed handpiece
 - e. Cotton rolls or other isolation materials
 - f. High volume evacuator/saliva ejector
 - g. 3-way syringe tip
 - h. Appropriate finishing bur
 - i. Abrasive rotary discs, cups, points
3. Seat and drape the patient. Place protective eyewear.
4. Explain the dental procedure to the patient.
5. Place PPE.
6. While under direct observation by the dentist.
7. Select abrasive device for gross removal of cement and place in handpiece.
8. Position patient and operator. Refer to the previous sections for correct positioning. A systematic sequence should be used to ensure cement is removed from all teeth.
9. Using a modified pen grasp and a stable fulcrum, bring the device close to the surface of the tooth.
10. Apply steady pressure to the foot control to activate the handpiece.
11. Complete initial or gross removal watching for color and texture changes indicating approach to enamel. Cement looks dull and feels rough when explored with an instrument. The cement will also be a different color than enamel.
12. Do not remove to the level of enamel. Rinse and/or suction as needed.
13. The dentist evaluates and completes procedure.
14. Complete chart entry.

6.03 Complete Removal of Orthodontic Cements or Resin on a Patient

After the assistant has shown proficiency in gross removal of orthodontic cement, final removal of cement or adhesive on a patient can be attempted under the direct supervision of the dentist. One tooth per quadrant should be mastered first followed by mastery of a quadrant. The final result for all patients should be evaluated by the dentist.

Intended Outcome

Given the necessary supplies and equipment for removing orthodontic resin cements with a high speed handpiece, the student will perform the following tasks with 100% accuracy. The student will perform to 85% accuracy on the final evaluation. The procedures for removal of orthodontic cements can only be done in an office under direct supervision of a dentist.

Tasks

Number of tasks to master = 21

1. Take universal precautions.
2. Assemble the tray set up. In an actual office you may find some of these items are not used.
 - a. Mouth mirror
 - b. Explorer
 - c. Cotton pliers
 - d. High-speed handpiece
 - e. Cotton rolls or other isolation materials
 - f. High volume evacuator/saliva ejector
 - g. 3-way syringe tip
 - h. Appropriate finishing bur
 - i. Abrasive rotary discs, cups, points
3. Seat and drape the patient. Place protective eyewear.
4. Explain the dental procedure to the patient.
5. Place PPE.
6. Under the direct supervision of a dentist position patient and operator (refer to previous sections for correct positioning). A systematic sequence should be used to ensure cement is removed from all teeth.

7. Select abrasive device for gross removal of cement and place in handpiece.
8. Using a modified pen grasp and a stable fulcrum, bring the device close to the surface of the tooth.
9. Apply steady pressure to the foot control to activate the handpiece.
10. Keeping the abrasive device parallel to the tooth surface, remove cement with a sweeping back and forth movement. Use a light touch.
11. Continue removal watching for color and texture changes indicating approach to enamel.
12. Do not remove to the level of the enamel. Rinse and/or suction as needed.
13. Select appropriate abrasive device (abrasive impregnated rubber point, non-crosscut finishing bur, or other conservative abrasive device) and place in the handpiece.
14. Using a modified pen grasp and a stable fulcrum, bring the device close to the surface of the tooth.
15. Apply steady pressure to the foot control to activate the handpiece. Run at near stall speed.
16. Keeping the abrasive device parallel to the tooth surface remove cement with a sweeping movement. Use a light touch.
17. Complete final removal of the cement. Rinse and/or suction as needed.
18. Check tooth with explorer, mirror, and illumination. Using illumination, a mouth mirror, and a hand instrument (i.e., explorer or scaler) look for markings, scrapes, and dull surfaces on tooth. Check all surfaces including the interproximal. Have patient check surface with tongue.
19. Dentist evaluates procedure.
20. Complete chart entry.

It is recommended that a coronal polish with prophy cup and fluoride prophy paste be used to remove any remaining stain. If adhesive must be removed from composite or porcelain restorations, a commercial polishing system should be used to obtain optimal shine and finish.

Competency-Based Practice Exam

Removing Orthodontic Cements on a Dentoform or Mounted Extracted Tooth

Student Name: _____

Dentist Evaluator: _____ Date: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary supplies and equipment for removing orthodontic cements with a high speed handpiece, the assistant will perform the following tasks with 100% accuracy in a clinical setting. The student will perform to 85% accuracy on the final evaluation. The procedures for removal of orthodontic cements can only be practiced and evaluated under direct supervision of a dentist.

	Tasks	Practice 1		Practice 2	
		Pass	Fail	Pass	Fail
1	Take universal precautions.				
2	Assemble tray set up. In an office you may find some of these items are not used. a. Mouth mirror b. Explorer c. Cotton pliers d. High-speed handpiece e. Cotton rolls or other isolation materials f. High volume evacuator/saliva ejector g. 3-way syringe tip h. Appropriate finishing bur i. Abrasive rotary discs, cups, points				
3	Place PPE.				
4	Select abrasive device for gross removal of cement and place in handpiece.				
5	Position patient (i.e., dentoform mounted teeth) and operator. Refer to the previous sections for correct positioning. A systematic sequence should be used to ensure cement is removed from all teeth.				
6	Using a modified pen grasp and a stable fulcrum, bring the device close to the surface of the tooth.				
7	Apply steady pressure to the foot control to activate the handpiece.				
8	Keeping the abrasive device parallel to the tooth surface, remove cement with a continuous sweeping movement. Use a light touch.				
9	Continue removal watching for color and texture changes indicating approach to enamel.				
10	Do not remove to the level of the enamel.				

		Practice 1		Practice 2	
	Tasks	Pass	Fail	Pass	Fail
11	Select appropriate adhesive devise (abrasive impregnated rubber point, non-crosscut finishing bur, or other conservative abrasive device) and place in the handpiece.				
12	Using a modified pen grasp and a stable fulcrum, bring the device close to the surface of the tooth.				
13	Apply steady pressure to the foot control to activate the handpiece. Run at near stall speed.				
14	Keeping the abrasive device parallel to the tooth surface remove cement with a continuous sweeping movement. Use a light touch.				
15	Remove the remainder of the adhesive.				
16	Check tooth with explorer.				
17	Have dentist evaluate procedure.				
Comments:					

Competency-Based Practice Exam

Gross Removal of Orthodontic Cements on a Patient

Student Name: _____

Dentist Evaluator: _____

Date: _____

Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary supplies and equipment for removing orthodontic cements with a high speed handpiece, the assistant will perform the following tasks with 100% accuracy in a clinical setting. The tasks will be performed on one tooth to competency and then on one quadrant to competency. The student will perform to 85% accuracy on the final evaluation. The procedures for removal of orthodontic cements can only be practiced and evaluated under direct supervision of a dentist.

	Tasks	Practice I Tooth		Practice I Quadrant	
		Pass	Fail	Pass	Fail
1	Take universal precautions.				
2	Assemble tray set up. In an office you may find some of these items are not used. a. Mouth mirror b. Explorer c. Cotton pliers d. High-speed handpiece e. Cotton rolls or other isolation materials f. High volume evacuator/saliva ejector g. 3-way syringe tip h. Appropriate finishing bur i. Abrasive rotary disc				
3	Seat and drape the patient. Place protective eyewear.				
4	Explain the dental procedure to the patient.				
5	Place PPE.				
6	Under direct supervision of dentist.				
7	Position patient and operator (refer to previous sections for correct positioning). A systematic sequence should be used to ensure cement is removed from all teeth.				
8	Select abrasive device for gross removal of cement and place in handpiece.				
9	Using a modified pen grasp and a stable fulcrum, bring the device close to the surface of the tooth.				
10	Apply steady pressure to the foot control to activate the handpiece.				
11	Complete initial or gross removal watching for color and texture changes indicating approach to enamel. Cement looks dull and feels rough when explored with an				

		Practice I Tooth		Practice I Quadrant	
	Tasks	Pass	Fail	Pass	Fail
	instrument. The cement will also be a different color than enamel.				
12	Do not remove to the level of enamel. Rinse and/or suction as needed.				
13	The dentist evaluates and completes procedure.				
14	Complete chart entry.				
Comments:					

Competency-Based Practice Exam

Complete Removal of Orthodontic Cement on a Patient

Student Name: _____

Dentist Evaluator: _____ Date: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary supplies and equipment for removing orthodontic cements with a high speed handpiece, the assistant will perform the following tasks with 100% accuracy in a clinical setting. The tasks will be performed on one tooth to competency and then on one quadrant to competency. The student must demonstrate at least 85% accuracy on the final clinical examination. The student will perform to 85% accuracy on the final evaluation. The procedures for removal of orthodontic cements can only be practiced and evaluated under direct supervision of a dentist.

Time allotment: 30 minutes

	Tasks	Practice 1 Tooth		Practice 1 Quadrant	
		Pass	Fail	Pass	Fail
1	Take universal precautions.				
2	Assemble tray set up. In an office you may find some of these items are not used. a. Mouth mirror b. Explorer c. Cotton pliers d. High speed handpiece e. Cotton rolls or other isolation materials f. High volume evacuator/saliva ejector g. 3-way syringe tip h. Appropriate finishing bur i. Abrasive rotary disc				
3	Seat and drape the patient. Place protective eyewear.				
4	Explain the dental procedure to the patient.				
5	Place PPE.				
6	Under direct supervision of the dentist.				
7	Position patient and operator (refer to previous sections for correct positioning). A systematic sequence should be used to ensure cement is removed from all teeth.				
8	Select abrasive device for removal gross removal of cement and place in handpiece.				
9	Using a modified pen grasp and a stable fulcrum, bring the device close to the surface of the tooth.				
10	Apply steady pressure to the foot control to activate the				

	Tasks	Practice 1 Tooth		Practice 1 Quadrant	
		Pass	Fail	Pass	Fail
	handpiece.				
11	Keeping the abrasive device parallel to the tooth surface, remove cement with a sweeping back and forth movement. Use a light touch.				
12	Watch for color and texture changes indicating enamel.				
13	Do not remove to level of enamel. Rinse and suction as needed.				
14	Select appropriate abrasive devise (abrasive impregnated rubber point, non-crosscut finishing bur, or other conservative abrasive device) and place in the handpiece.				
15	Using a modified pen grasp and a stable fulcrum, bring the device close to the surface of the tooth.				
16	Apply steady pressure to the foot control to activate the handpiece. Run at near stall speed.				
17	Keeping the abrasive device parallel to the tooth surface remove cement with a sweeping movement. Use a light touch.				
18	Complete final removal of the adhesive. Rinse and /or suction as needed.				
19	Check tooth with explorer, mirror and illumination. Using illumination, a mouth mirror, and a hand instrument (i.e., explorer or scaler) look for markings, scrapes, and dull surfaces on tooth. Check all surfaces including the interproximal. Have patient check surface with tongue.				
20	Dentist evaluates procedure.				
21	Recommended: Polish with prophy cup and fluoride prophy paste and enamel and commercial polishing system for composite or porcelain.				
22	Complete chart entry.				
Comments:					

Clinical Requirements Completed

Use of High Speed Handpiece for Removal of Orthodontic Cement or Resin

Each student is required to do the following:

- 1.) Gross removal on a typodont and a patient
- 2.) A complete removal on a typodont and a patient
- 3.) When working on a patient on a patient Consent/Permission slips are required.

	Dentist Signature	Date
	Gross Removal	
1.		
2.		
	Complete Removal	
3.		
4.		

CLINIC REQUIREMENT

FORMS TO BE SUBMITTED TO CLINICAL EXAMINER AT FINAL EXAMINATION

Competency-Based Clinical Final Evaluation

Removal of Orthodontic Cements or Resins with a High Speed Handpiece

Student Name: _____

Evaluator: _____ Grade: ☐ Pass ☐ Fail

Intended Outcome

Given the necessary personnel, supplies and equipment to perform cement removal, the student will perform the following tasks on one quadrant of a patient with 85% accuracy on the final examination (28 points out of 34).

Time allotment: 30 minutes

Grading Criteria				
	2 = Acceptable	1 = Improvable	0 = Unacceptable	0-2
1	Maintains aseptic technique with universal precautions.			
2	Armamentarium is complete.			
3	Appropriate abrasive devises selected.			
4	Positions patient for maximum comfort/accessibility.			
5	Maintains good posture with face about 10-14 inches from patient.			
6	All attachments are used as designed.			
7	Efficient sequence is used.			
8	Uses correct grasp.			
9	Maintains stable intraoral fulcrum.			
10	Maintains appropriate speed.			
11	Correctly completes gross removal of cement.			
12	Correctly completes final removal of cement.			
13	Removal is checked using explorer, mirror and illumination.			
14	All adhesive is removed from tooth surfaces with no damage to tooth structures or tissue. This step is required to pass procedure.			
15	Complete chart entry.			
Total				
Comments:				

Coronal Polishing/Pit and Fissure Sealants Permission Slip

This is to verify that I examined _____ (patient name) on _____ (date) and diagnosed the treatment approved below. I give my permission for this patient to receive coronal polishing and/or pit and fissure sealants as part of the Idaho State Expanded Functions for dental assistants certification program.

- ☐ Coronal polish (check here if hard deposits have been removed and treatment is approved).
- ☐ Pit and fissure sealants (check here if teeth were radiographically and clinically examined and treatment is approved). List tooth/teeth approved for sealants.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Dentist Signature: _____

Date: _____

According to Idaho State law, the application of pit and fissure sealants and coronal polishing are procedures that must be diagnosed by a dentist. Patients receiving treatment in this program must receive permission from his/her family dentist before the procedure(s) can be performed. Return to the course instructor.

Patient Consent for Treatment

The following services are performed by a dental assistant under the direct supervision of a licensed dentist. The services performed by the dental assistant are required for his/her preparation to become certified in expanded function in the State of Idaho. Prior to treatment, any questions pertaining to these services will be answered by the supervising dentist or the dental hygienist employed in the office.

Place a check by any service(s) which you wish to receive.

- ☐ Placement and removal of temporary restorations.
- ☐ Mechanical polishing of restorations.
- ☐ Administering and monitoring of nitrous oxide (see additional consent in Nitrous Oxide section.)
- ☐ Application of pit and fissure sealants.
- ☐ Coronal polishing. This would be applicable only after examination by a dentist and removal of calculus by a dentist or dental hygienist.
- ☐ Taking alginate impressions.

I have read and understand the preceding paragraph. This Consent for Treatment is hereby fully, freely, and voluntarily executed by me on:

Individual Signature: _____

Date: _____

If under 18 years of age:

Parent/Guardian
Signature: _____

Date: _____

Recommended Text

Robinson, Debi, MS., Ehrlich and Torres Essentials of Dental Assisting, Most recent Edition.
Philadelphia: W. B. Saunders Company, 2011.

Expanded Function Study Modules available from Idaho PTE website.

References

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Materials and Procedures for Today’s Dental Assistant, (2006) Canada, Thomson.

Phinney, D. and Halstead, J. (2008) Dental Assisting, A Comprehensive Approach, 3rd. Ed. Canada, Thomson.